ACQUIRING FIRM LONG-TERM PERFORMANCE AND GOVERNANCE CHARACTERISTICS

A Dissertation

by

JONATHAN PAUL BREAZEALE

Submitted to the Office of Graduate Studies of
Texas A&M University
in partial fulfillment of the requirements for the degree of

DOCTOR OF PHILOSOPHY

May 2004

Major Subject: Finance

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L. Paige Fields (Chair of Committee)	Christo Pirinski (Member)
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ABSTRACT

Acquiring Firm Long-term Performance and Governance Characteristics. (May 2004)
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I examine the market reaction to merger announcements and the long-term post-merger stock price performance of newly merged firms. For a sample of 484 acquiring firms completing mergers between 1993 and 2000, the average value-weighted abnormal announcement date return (market-adjusted) is a statistically significant -1.02%. On average, this reaction is more negative for firms with "good governance." Specifically, a governance index comprised of three governance variables is significantly negative in a multivariate regression of announcement date abnormal returns. ***Comp*** is the percentage of CEO salary consisting of equity incentives (including stock options and restricted stock grants), ***InsideOwn*** is the percentage of the firm owned by officers and directors, and ***InstOwn*** is the percentage of the firm owned by large outside block shareholders. Value-weighted calendar-time portfolios consisting of the full sample of acquirers exhibit significant abnormal returns of 9.12%, 33.84% and 55.8% for the 12, 36 and 60 months following the merger, respectively. This overperformance is limited to the value-weighted portfolios. There is calendar-time evidence of abnormal performance for some subsamples on a risk adjusted basis. However, when compared to a control group, abnormal performance is limited to large glamour acquirers on a 12-month horizon, large cash acquirers on a 36 and 60-month horizon, and small focusing acquirers on a 60-month horizon. Multivariate analysis of long-run returns reveals that use of equity and corporate diversification are associated with lower post-merger performance. With regard to governance and long-run stock returns, there is also evidence that suggests higher levels of incentive compensation for CEOs is associated with more successful merger transactions for long-term investors.

Dedicated to my wife Jennifer, father Paul, and mother Voncile.

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I also sincerely appreciate the financial support granted me from the university through the graciousness of the department heads of the finance department, Drs. Don Fraser and Dave Blackwell. Their support, in the form of assistantships, scholarships and travel allowances, has been most beneficial.

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CHAPTER I
INTRODUCTION

Does governance matter? In other words, does the existence of a particular governance structure have an impact on the value of the firm? If so, one would expect firms with better governance to be those who make decisions that maximize firm value. Specifically, firms with good governance should make better investment, financing, payout and hedging decisions than firms with poor governance. In fact, the corporate finance function that has received a great deal of attention in the popular press recently has been the financial reporting function. Congress and U.S. stock exchanges are so certain that poor governance has been the root of poor financial reporting that they have enacted drastic legislation and regulations aimed at creating better governance structures at publicly traded companies. For instance, the Sarbanes Oxley Act of 2002 now requires that CEOs and CFOs issue certification statements to accompany financial statements and that boards of directors include "financially-literate members" with no financial ties to public accounting firms. As of November 4, 2003, the New York Stock Exchange (NYSE) has implemented a new 18-page document of listing standards for corporate governance of member firms. On the whole, there exists a general feeling that something is awry in the current governance structures of public U.S. firms.

This paper examines the impact of governance on the firm's investment decision. Through that decision, firm managers are able to create value by accepting positive net present value (NPV) projects and rejecting negative NPV projects. Similarly, they have the potential to destroy firm value by accepting negative NPV projects (overinvesting) and rejecting positive NPV projects (underinvesting). While the firm's decision to reject a project is unobservable, we are able to see at least a portion of their investment policy through projects they accept. Perhaps the largest and most visible project a firm can undertake is the decision to purchase another company.

This dissertation follows the style and format of the Journal of Financial Economics.

Why study the investment decision? Modigliani and Miller (1958) suggest that, in a world without frictions, there is no difference between an equity and debt claim on the firm's cash flows. Therefore, in such an economy, the financing decision adds no value and is therefore of no concern to managers. While they do not expect this solution (or lack thereof) to hold in reality, they do suggest that the most feasible way in which to add value to a company is through its investments and its increase in operating cash flows. Value added via fancy financing schemes should be small by comparison.

The long-term post-merger return performance of newly merged firms has garnered a great deal of attention in the literature of financial economics. Critics of market efficiency provide evidence that merger transactions, on average, are followed by significant negative abnormal drift in the returns of the newly formed companies over the subsequent one to five year periods. For example, Asquith (1983) finds a significant cumulative excess return of -7.2% for merged firms over the 240 trading days following the merger. Agrawal, Jaffe and Mandelker (1992) report a significant -10.26% abnormal return over the subsequent 60 months. Such researchers herald this finding as inconsistent with the notion that the market responds quickly and fully to the arrival of the information contained in merger transactions. Proponents of market efficiency argue that the evidence supporting negative post-merger drift is plagued with errors. For example, Fama (1998) and Mitchell and Stafford (2000) argue that such errors include use of an inappropriate benchmark (and the accompanying bad model problem), inappropriate distributional assumptions of test statistics and the inappropriate assumption of independence of observations. Mitchell and Stafford (2000) correct for these biases, and the negative drift they report is not significantly different from zero. As of yet, the issue of negative versus zero post-merger return drift is unresolved.

In contrast to the argument of whether long-term post-merger drift is significantly different from zero, the purpose of this paper is to use the recent advances in performance measurement to develop a clearer picture of the determinants of the cross-sectional dispersion of long-term post-merger returns in a multivariate

framework. In so far as current methodologies appropriately account for all relevant risk, this paper asks what deal or firm characteristics contribute to the success or failure of a merger for a long-term investor.

The idea of examining the sources of the economic gains to mergers (with emphasis on long-term shareholders) is not new. In a long horizon study of merger waves, Andrade, Mitchell and Stafford (2001) remark:

> What are the long-term effects of mergers, and what makes some successful and others not? We hope that over the next decade merger research will move beyond the basic issue of measuring and assigning gains and losses to tackle the more fundamental question of how mergers actually create or destroy value. (p. 104)

Researchers have begun to answer their call. Several factors have been shown to influence long-term post-merger returns; however, frequently such evidence is contradicted in other studies. For example, Loughran and Vijh (1997) and Mitchell and Stafford (2000) find that acquirers using cash significantly outperform stock offers. Franks, Harris, and Titman (1991) report no significant difference between the two groups of acquirers. Megginson, Morgan, and Nail (2003) suggest that the most important determinant of long-term post-merger return performance is whether or not the merger is diversifying in nature. They report that a 9.0% loss in shareholder wealth is observed for each 10% decrease in corporate focus (as measured by a continuous Herfindahl Index measure). Agrawal, Jaffe and Mandelker (1992) report that non-conglomerate mergers actually underperform mergers that are diversifying in nature. Rau and Vermaelen (1998) report that "value" acquirers (those with a high book-to-market equity ratio) outperform "glamour" acquirers (those with a low book-to-market equity ratio) over a three-year period following merger completion. Megginson, Morgan and Nail (2003) find no significant difference between glamour and value acquirers. In sum, numerous contradictions exist among empirical studies of long-term post-merger returns. Many of the discrepancies in the existing studies may be explained by different sample periods, but the methodologies employed are as different in number as the number of the studies themselves. Namely, authors have chosen both

different return metrics and different benchmarks for expected returns. In studies of long-term performance, the appropriate choice of both is critical. Unfortunately, no choice is perfect or even beyond the reach of deserved criticism. Without a perfect model of the return generating process, this debate will continue indefinitely.

In addition to examining determinants that have received a great deal of attention in the long-term performance literature, I also incorporate internal governance mechanisms of acquiring firms.[1] The purpose of internal corporate governance mechanisms is to more closely align the competing self-interests of shareholders and managers, thereby reducing the agency costs associated with the separation of ownership and control. If corporate governance mechanisms are successful in mitigating agency costs, then we should observe firms making sound investment decisions that are in the best interests of shareholders. The central hypothesis of this paper is that firms with good internal governance make better acquisitions because of decreased agency costs between managers and shareholders.

Typically, studies of corporate governance can be categorized as one of two types. The first type, like this study, examines the effectiveness of corporate governance mechanisms on specific decisions made by the firm. For example, Weisbach (1988) demonstrates that firms with a majority of outside directors are more likely to remove an ineffective CEO. Byrd and Hickman (1992) report that for a sample of tender offers, bidding firms with at least fifty-percent non-affiliated board representation have significantly higher announcement-date abnormal returns than do bidders with insider dominated boards. While an analysis of this type sheds light on the effectiveness of corporate governance on the decision in question, it does not necessarily follow that firms with good governance will always make decisions that make shareholders better off. Also, one cannot assume that evidence in support of effective governance on one particular decision implies a positive impact on overall

[1] This paper uses the conventions of Byrd, Parrino and Pritsch (1998) in classifying governance mechanisms as either internal or external to the firm. Internal governance mechanisms include debt, dividends, managerial stock ownership, managerial compensation, board structure, board ownership, and large outside shareholders. External mechanisms include the market for corporate control and the market for managerial labor.

firm value or performance. However, the advantage of such a study is the tractability of data and the ease of interpretation with regard to the particular decision in question.

The second type of corporate governance study involves a regression of some measure of overall firm value or performance on multiple governance variables. Assuming that the left-hand side of the specification of interest accurately measures firm value or performance, the interpretation of the results of this type of study is more informative than the results of the research design described above. A direct positive or negative relation between the governance characteristic and overall firm value is observed simply via the coefficient estimates of the explanatory variables. More recent studies have begun to control for the issue of endogeneity which typically plagues studies of this type. For example, it is unclear whether a firm is valued more highly because of increased ownership by outside block shareholders or if outside block shareholders own shares because the firm is valued highly. Simultaneous equation models are now frequently used to appropriately discern causality. It also remains uncertain whether the measure being used to capture firm value actually performs such a role. Typically, the left-hand side is some variant of Tobin's *Q* which arguably measures the value added to the firm's assets from being under the control of present management. Inevitably, this metric is calculated using some form of a market-to-book equity ratio (usually industry adjusted) which is not without criticism. Obvious arguments aside, some asset pricing researchers use this same measure to capture systematic risk. Likewise, capital structure researchers frequently argue that market-to-book equity is a natural proxy for the growth opportunities available to a firm. Although seemingly more simple in interpretation, one can see how this alternative research design is confounded by its own problems.

The main contribution of this paper is to show how internal governance characteristics influence the cross-sectional dispersion of post-merger returns over a long-term horizon. In order to test the proposition that governance influences merger performance, I use a myriad of methodologies. First, I conduct a standard event study for merger announcements and examine whether or not this announcement is different for firms with high versus low values of three governance variables. ***Comp*** is defined

as the portion of CEO compensation that consists of incentive equity compensation in the twelve months prior to the merger announcement, ***InsideOwn*** is the percentage of outstanding shares owned by officers and directors in the twelve months prior to the announcement, and ***InstOwn*** is the percentage of the firm held by outside block shareholders in the twelve months prior to the announcement. Next, I conduct a multivariate regression of the announcement day returns on the governance mechanisms and controls. I then form equally-weighted and value-weighted portfolios in calendar time in a test of market efficiency on a 12 to 60-month horizon. I also test for differences between the alphas of each of the subsamples of interest. Finally, I conduct multivariate regressions of long-run returns on the governance variables and a set of controls. I repeat this process using long-run post-merger returns. Additionally, my analysis of long-run returns uses the calendar-time portfolio methodology suggested by Fama (1998) and Mitchell and Stafford (2000).

For a sample of 484 acquiring firms completing mergers between 1993 and 2000, the average value-weighted abnormal announcement date return (market-adjusted) is a statistically significant -1.02%. On average, this reaction is more negative for firms with "good governance." Specifically, a governance index comprised of three governance variables is significantly negative in a multivariate regression of announcement date abnormal returns. ***Comp*** is the percentage of CEO salary consisting of equity incentives (including stock options and restricted stock grants), ***InsideOwn*** is the percentage of the firm owned by officers and directors, and ***InstOwn*** is the percentage of the firm owned by large outside block shareholders. Value-weighted calendar-time portfolios consisting of the full sample of acquirers exhibit significant abnormal returns of 9.12%, 33.84% and 55.8% for the 12, 36 and 60 months following the merger, respectively. This overperformance is limited to the value-weighted portfolios. There is calendar-time evidence of abnormal performance for some subsamples on a risk adjusted basis. However, when compared to a control group, abnormal performance is limited to large glamour acquirers on a 12-month horizon, large cash acquirers on a 36 and 60-month horizon, and small focusing acquirers on a 60-month horizon. There is no univariate evidence in calendar-time that any of the three governance measures matters in the

long-run. Multivariate analysis of long-run returns reveals that equity as a method of payment and corporate diversification are associated with lower post-merger performance. Unlike the univariate calendar-time results, there is multivariate evidence that a high level of incentive compensation for CEOs is associated with more successful merger transactions for long-term investors.

Chapter II of the paper describes the extant research and applicable literature associated with long-run return measurement, the long-run performance of combined firms and the relation between internal governance mechanisms and corporate control transactions. Chapter III describes the hypotheses development, data and methodologies. Results are presented in chapter IV, and chapter V concludes.

CHAPTER II
LITERATURE REVIEW

2.1 Introduction

The purpose of this paper is to use the recent advances in performance measurement to develop a clearer picture of the determinants of the cross-sectional dispersion of long-term post-merger returns. As such, in this section, I review the evidence regarding measurement of long-run abnormal returns, the extant evidence regarding determinants of long-term post-merger abnormal returns and the evidence on how the external governance characteristic of the corporate control market interacts with internal governance characteristics.

2.2 Measurement of Long-term Abnormal Stock Returns

The two most popular choices for long-term abnormal return measurement are the cumulative abnormal return (CAR) and the buy-and-hold abnormal return (BHAR). The CAR is calculated by simply adding the abnormal returns for each period of measurement (typically a month) to yield an abnormal return measure over a horizon of twelve to sixty months. The BHAR is found by compounding each sub-period return into a buy-and-hold measure for the twelve to sixty month period of analysis. Mathematically, these two measures are defined as:

$$CAR_{it} = \sum_{t=1}^{T} \left[R_{it} - E\left(R_{it}\right) \right] \tag{2.1}$$

$$BHAR_{it} = \prod_{t=1}^{T} (1 + R_{it}) - \prod_{t=1}^{T} (1 + E(R_{it})) \tag{2.2}$$

Once a metric has been chosen, the second and most important decision a researcher must make in the calculation of long-term abnormal returns is the choice of an appropriate benchmark. Candidates receiving attention thus far have been reference portfolios (such as the value-weighted or equal-weighted index of firms maintained by the Center for Research in Security Prices (CRSP) or the twenty-five size and book-to-

market portfolios of Fama and French (1993)), a set of control firms selected in a manner designed to mimic the risk of sample firms, and the application of an asset pricing model such as the three factor model of Fama and French (1993) or the four factor model of Carhart (1997).

Barber and Lyon (1997) argue for the use of the BHAR over the CAR. They demonstrate that the CAR suffers from a measurement bias due to the fact that CARs ignore compounding, thereby making them a biased predictor of BHARs. However, the potential inclusion of newly listed firms in the benchmark and not in the sample under consideration may cause the mean CAR and mean BHAR to be non-zero. Both the CAR and the BHAR suffer from being positively skewed; however, the BHAR suffers from this skewness bias even more drastically than the CAR. Finally, the BHAR suffers from a rebalancing bias when using an equal-weighted benchmark with monthly rebalancing. With such rebalancing, overperforming firms (relative to the market) are sold in favor of adding underperforming firms. Although Barber and Lyon (1997) admit that the BHAR suffers from its own problems (and their results demonstrate that less problematic inferences may be made from CARs), they prefer its use to that of the CAR because they believe that the BHAR more accurately represents investor experience.

Regarding the benchmark of expected returns, Barber and Lyon (1997) argue for the use of the control firm approach over the reference portfolio approach or the Fama and French (1993) three-factor model. According to their random samples, CARs calculated via the reference portfolio approach exhibit a positively biased statistic, while BHARs calculated via the reference portfolio and CARs calculated using the Fama and French (1993) three-factor model exhibit negatively biased statistics. Both BHARs and CARs appear to be well-specified when control firms are used, especially when selected on the basis of both size and book-to-market.

Lyon, Barber and Tsai (1999) improve upon the Barber and Lyon (1997) methodology. Specifically, they control for the new listing, rebalancing and skewness biases discussed above and find that two measures of abnormal returns are well-specified in random samples. First, they develop a set of size and book-to-market

reference portfolios designed to eliminate the new listing and rebalancing biases. They then calculate and test BHARs of random firms against (1) a bootstrapped distribution to adjust for skewness and (2) against the simulated distribution of mean returns using pseudo-portfolios as in Ikenberry, Lakonishok and Vermaelen (1995). This method results in well-specified test statistics in random samples. While they continue to argue that it is not reflective of the returns experienced by actual investors, they also test the calendar-time methodology of Jaffe (1974) and Mandelker (1974) that is advocated by Fama (1998) and Mitchell and Stafford (2000). Formation of calendar-time portfolios eliminates the cross-sectional dependence of observations and results in well-specified test statistics. The greatest insight of their new findings is that for non-random samples, controlling for size and book-to-market does not necessarily result in well-specified statistics. This is the case for both the BHAR and calendar-time methods. For a non-random sample of merged firms such as the one studied here, this implies that calculation of abnormal returns must be undertaken with great caution. In fact, Lyon, Barber and Tsai (1999) conclude that "analysis of long-run abnormal returns is treacherous" (p. 165).

Fama (1998) argues for the use of CARs. Any test of market efficiency implicitly includes a simultaneous test of the model of expected returns being used in the test. This bad model problem is more acute for BHARs which compound the problems associated with accurately measuring the expected return. For a long-horizon study, this compounding effect becomes even more problematic. Fama advocates using a firm-specific model, such as the market model, as a potential correction to the bad model problem. Specifically, one estimates the coefficients in a regression of the individual stock's return on the market return and uses the estimated coefficients to calculate the abnormal return. The comparison period approach of Masulis (1980) is also suggested as a way to avoid the bad model problem. However, Fama (1998) admits that many corporate news events are preceded by unusual returns as well, which makes it difficult to identify a "normal" period in which to estimate model parameters. The alternative is to select an asset pricing model which constrains the cross-section of expected returns, but this induces the bad model problem that plagues

proper calculation in the first place. Not only do BHARs suffer more drastically from the issue of a bad model, but Fama (1998) argues a formal test of abnormal returns "should use the return metric called for by the model invoked to estimate expected (normal) returns." (p. 294). He suggests that using a compounded return on a horizon of up to sixty months is inconsistent with the single (shorter) period assumptions under which most asset pricing models were derived. Monthly returns serve as a more well-behaved measure of abnormal returns. For these reasons, he strongly argues for the use of CARs.

Kothari and Warner (1997) verify the extreme skewness of the BHAR measure in their simulation evidence. They report that tests using an asset pricing model such as the Fama and French (1993) three factor model as a benchmark for expected returns reject the null of zero abnormal returns too often. They also report that the use of BHARs or of CARs when using this benchmark does not alter inferences; however, their analysis of the distributional properties of their estimates supports the necessity of adjusting BHARs for extreme skewness. They recommend the procedure used by Ikenberry, Lakonishok and Vermaelen (1995) where the empirical distribution of the abnormal return is generated by one thousand random samples of abnormal returns of event firms matched in time with firms of similar size and book-to-market equity characteristics.

Mitchell and Stafford (2000) echo many of the concerns of Fama (1998). They argue that BHARs are not a superior method of measuring long-term abnormal returns. Specifically, BHARs suffer from statistical problems that cannot be solved by the bootstrapping procedures previously discussed. Even if one can properly adjust the mean of the distribution of abnormal returns, Mitchell and Stafford argue that the distribution is too "thin" because the bootstrapped distribution does not correct for the cross-correlation of residuals created by the non-independence of event firms. Applying an ad hoc procedure to correct for non-independence, they demonstrate that long-term post-event BHARs are not significantly different from zero for samples of merged firms, firms executing seasoned equity offerings (SEOs) and firms repurchasing shares of common equity. Their preferred solution is described in detail below.

2.3 Long-term Post-Merger Abnormal Stock Returns and Their Determinants

In a perfect world, one would prefer to compare the return of a merged firm with the return of the same firm had it not merged (or alternatively, an *identically* risky non-merging firm). In order to judge or evaluate post-merger performance, and without the ability to observe such returns, researchers are left to determine an appropriate benchmark or model of expected returns. The literature on mergers has come a long way in measuring long-term post-merger returns in a manner that controls for risk. Table 1 summarizes the discussion that follows.

Mandelker (1974) is the first major study of long-term post-merger stock returns to incorporate a large sample with a model that adjusts for risk (and changes in risk). The questions Mandelker asks are 1) "Are mergers in fact associated with abnormal positive or negative returns?" and 2) "Is the capital market efficient with respect to mergers? That is, is information on mergers reflected immediately in the stock prices of the merging firms?" (p. 304). In order to determine abnormal returns to bidders and targets, Mandelker employs the Capital Asset Pricing Model (CAPM) of Black (1972) as a measure of expected returns that controls for risk. Using monthly data on his sample of 241 NYSE acquirers, Mandelker finds that combined firms display no significant cumulative abnormal residuals as many as forty months subsequent to the merger completion. He interprets his findings as consistent with the efficient markets hypothesis. This result is important because prior to his study, the general tenor of research on mergers suggested that mergers were followed by significant negative abnormal returns (for example, see Hogarty (1970)). For robustness, Mandelker (1974) forms portfolios in calendar-time to control for the non-independence of events. While his method has since been refined, he and Jaffe (1974) are credited with the development of this new methodology. However, the results of his analysis are still consistent with the notion that the market incorporates the news of the merger at the time of the announcement. The calendar-time abnormal returns (CTARs) do not tell a convincing story one way or another.

Contrasting the methods of Mandelker (1974), Langetieg (1978) employs several variants of the Sharpe (1964) and Lintner (1965) CAPM and the Black (1972) CAPM

with an additional equally-weighted or correlation-weighted industry factor. Recognizing the criticisms of Roll (1977), Langetieg (1978) motivates his use of the industry factor because of the factor's *ex post* explanatory power in the cross-section of returns. Langetieg hypothesizes that inclusion of such a factor is also consistent with the multi-factor arbitrage pricing theory (APT) of Ross (1976). He finds a significantly negative cumulative excess return on the order of -6.00% to -6.59% on a twelve month post-merger horizon for a sample of 149 firms from the CRSP delisting array over the period 1929 to 1969. However, this return is not significantly different from that of a control sample of 141 firms within each sample firm's two-digit standard industrial classification (SIC) code. Controls are chosen that have the highest residual correlation (residual to the market) to the sample firm (within the same industry). This result ultimately leads Langetieg (1978) to also support the efficient markets hypothesis.

Asquith (1983) opts to employ a control portfolio approach to determining the expected return for merging firms. Specifically, all NYSE and AMEX firms are formed into ten equally-weighted portfolios based on market beta. The return on the portfolio with the beta closest to that of the sample firm is taken as the merged firm's expected return. Average daily excess returns are then calculated as the sample mean in event-time. For periods greater than one day, Asquith forms calendar-time portfolios of sample firms for which the completion date occurred within some previous period. On each date in calendar-time, he calculates the mean return of the portfolio formed by the aforementioned rule. A time-series average of mean portfolio excess returns yields the average standardized portfolio excess return to be tested. For a period of 240 days after merger completion, his sample exhibits a significant -7.2% calendar-time abnormal return.

Malatesta (1983) uses the now common market model to estimate parameters by ordinary least squares (OLS). The forecast error is then calculated as the difference between the realized return of the merging firm and the return predicted by the estimated parameters of the model. The sample of 121 mergers from 1969 to 1974 demonstrates a significant -2.9% abnormal return over the twelve month post-merger horizon (the merger date is defined to be the date of board approval). However,

Table 1
Review of the Evidence Regarding Long-Term Post-Merger Returns.

Articles examining the performance of completed mergers on a long-term horizon of 12 to 60 months are summarized in chronological order. Month zero refers to the month of merger completion unless otherwise noted. *CAR* refers to Cumulative Abnormal Return, *BHAR* refers to buy-and-hold abnormal return, and *CTAR* refers to a monthly calendar-time abnormal return. *EW* and *VW* refer to calculations based upon an equally-weighted and value-weighted benchmark, respectively.

Study	Reported Abnormal Return	Event Window (months)	Sample Size (firms)	Sample Period	Sample Details/Notes
Mandelker (1974)	0.6% CAR 0.1% CAR -1.4% CAR 0.03 to 0.32% CTAR	[0, +12] [0, +24] [0, +40]	241	1941-1962	NYSE acquirers
Langetieg (1978)	-6.59 to -6.00% CAR* -12.23 to -10.8% CAR* -26.15 to 22.3% CAR*	[0, +12] [0, +24] [0, +72]	149	1929-1969	Mergers between NYSE firms with CRSP data for at least three years prior to and after the merger
Asquith (1983)	-7.2% CTAR*	[0, +240] (days)	196	1962-1976	All acquirers of NYSE targets
Malatesta (1983)	-2.9% CAR -13.7% CAR*	[0, +12] [0, +12]	121 75	1969-1974 1971-1974	Month 0 is month of board approval. Sample is targets with at least $10 million in assets.
Franks, Harris and Titman (1991)	-3.96 to +10.44%* CAR -0.22 to +0.37%* CTAR	[0, +36]	346	1975-1984	Month 0 is month of final bid. NYSE & AMEX acqs. and targets
Agrawal, Jaffe and Mandelker (1992)	-1.53% CAR -4.94% CAR* -7.38% CAR* -8.67% CAR* -10.26% CAR*	[0, +12] [0, +24] [0, +36] [0, +48] [0, +60]	765	1955-1987	NYSE acquirers of NYSE and AMEX targets.
Gregory (1997)	-5.80 to -9.28% CAR* -11.18 to -17.06% CAR* -0.66 to -0.99% CTAR*	[0, +12] [0, +24]	452	1984-1992	"[All] successful UK domestic takeovers of listed companies by UK plcs with a bid value greater than £10 million"
Loughran and Vijh (1997)	-15.9% BHAR* -14.2% BHAR	[0, +60] [0, +60]	788 434	1970-1989	NYSE, AMEX and NASDAQ targets. Results are reported for the full sample and a subsample of non-overlapping observations in the 60-month window.
Rau and Vermaelen (1998)	-4.04% CAR* -2.58% CAR*	[0, +36] [0, +36]	2,823 643	1980-1991	NYSE, AMEX and NASDAQ bidders from *Securities Data Corporation* (SDC). Results are reported for the full sample and a subsample of public targets.
Mitchell and Stafford (2000)	-1.00% EW BHAR -3.80% VW BHAR -0.14% EW CTAR -0.07% VW CTAR	[0, +36] [0, +36]	2,068	1958-1993	Data taken from CRSP-EVENTS database (under development)
Megginson, Morgan and Nail (2003)	-2.58% BHAR -9.86% BHAR* -6.62% BHAR	[0, +12] [+13, +24] [+25, +36]	204	1977-1996	Mergers from SDC as well as CRSP delistings that do not suffer from "confounding events"

* Statistically significant at the 5.0% level or better.

Malatesta notes a difference between large and small acquirers over the twelve months following board approval. Acquiring firms with a market value in excess of $300 million twelve months prior to board approval display an insignificant 4.5% average forecast error while acquirers valued at less than $300 million display a significant -7.7% average forecast error. For the subperiod of 1971 to 1974, a significant forecast error of -13.7% is observed. Malatesta (1983) appropriately notes that he has measured abnormal returns differently than Langetieg (1978) in that Langetieg actually constrained the cross-section of returns by implicitly assuming a known return generating process. Malatesta offers that the difference between his results and those of Langetieg (1978) is this difference in methodologies. Rather than interpret his results as inconsistent with market efficiency, Malatesta (1983) does not rule out the possibility that any technique used to determine expected returns perhaps does not adequately capture all relevant risk or changes in risk.

Franks, Harris and Titman (1991) also support the notion that researchers use inadequate benchmarks for expected returns when examining post-merger returns. They pose that previous findings of negative abnormal returns are due to an incorrect adjustment for risk. To correct for the fact that prior studies use inefficient benchmarks, Franks, Harris and Titman use a myriad of control portfolios constructed in a manner so as to be efficient. They then analyze their sample of 399 firms from 1975 to 1984 in both event- and calendar-time over a thirty-six month interval. Depending on the benchmark for expected returns used, they report a range of cumulative abnormal residuals in event-time of anywhere between an insignificant -3.96% to a significant +10.44%. Their calendar-time abnormal return estimates also vary wildly from an insignificant -7.92% to a significant +13.22%. They also analyze several subsamples of firms in an effort to confirm or refute the contention that there exist differences in post-merger performance between different groups of acquirers. Specifically, they partition the sample on the basis of means of payment, relative sizes of the target and bidder and the level of opposition by target managers. Smaller bidders outperform larger bidders only when inefficient portfolios are used as benchmarks. Use of efficient control portfolios mitigates or eliminates the difference in abnormal returns between the two

groups. This finding holds when the sample is partitioned on the basis of relative size rather than raw size. Likewise, the superior performance of cash bidders relative to stock bidders disappears when efficient benchmarks are used, and the superior performance of bids opposed by target managers also disappears. Franks, Harris and Titman (1991) fail to find convincing evidence of either negative post-merger returns or differences in post-merger returns between subsamples formed on the basis of firm or deal characteristics.

Agrawal, Jaffe and Mandelker (1992) find a significant negative CAR of -10.26% in the sixty months following mergers from 1955 to 1987. They employ the model of Dimson and Marsh (1986) to adjust for size and changes in risk and argue that the Franks, Harris and Titman results are specific to their period of study. Interestingly, their results are robust to the use of the calendar-time portfolio approach of Jaffe (1974) and Mandelker (1974). They find no evidence of underperformance following tender offers.

Gregory (1997) appropriately notes that the largest discrepancy between many studies of long-run bidder returns involves the choice of a model of expected returns. Gregory uses the CAPM, the Dimson and Marsh (1986) risk and size adjusted model, the Fama and French (1993) three-factor model and several variants of the three as benchmarks. Like Agrawal, Jaffe and Mandelker (1992), he provides evidence of a change in model parameters from the pre-event to the post-event period and elects to estimate parameters during the post-event period. For a sample of UK takeovers from 1984 to 1992, Gregory (1997) finds a statistically significant -11.18% to -17.06% CAR in the post-merger period as far as twenty-four months into the future, regardless of the model of expected returns used. Additionally, calendar-time regression results indicate a -0.66% to -0.99% monthly CTAR which is even more negative than the reported event-time abnormal returns. Gregory (1997) then partitions his sample on the basis of method of payment, whether or not the merger is of a conglomerate nature, whether the bid is hostile, whether the acquirer is a 'regular' acquirer in that the firm has acquired before and whether or not there was a competing bid for the target. Cash bidders significantly outperform stock bidders and stock bidders significantly

underperform bids involving both cash and stock. Abnormal returns for focusing acquisitions are significantly higher than those for conglomerate mergers (defined as bidder and target having a different two-digit Standard Industrial Classification [SIC] codes). Likewise, hostile bids outperform friendly ones, and regular acquirers appear to do better than one-off acquirers. There is no evidence to suggest that the arrival of a competing bid results in decreased performance for the acquirer.

Similarly, Loughran and Vijh (1997) examine a sixty month post-merger horizon and find a -25.0% abnormal return for acquirers using stock versus a positive 61.7% abnormal return for cash acquirers. Loughran and Vijh (1997) disagree with the monthly rebalancing conducted by Franks, Harris and Titman (1991) and Agrawal, Jaffe and Mandelker (1992) because it does not represent the experience of long-term shareholders of the acquiring and target firms. Rather than using a benchmark asset pricing model, Loughran and Vijh (1997) select control firms on the basis of size and book-to-market equity and compare the returns of sample firms with those of the chosen control firms. Overall, the difference between the buy-and-hold return of acquiring firms and the buy-and-hold return of control firms is a significant -15.9%. For a subsample of non-overlapping observations during the 1970 to 1989 period, the BHAR of acquiring firms is an insignificant -14.2%.

Rau and Vermaelen (1998) utilize a control portfolio approach in calculating long-term underperformance of acquiring firms. They report a significant -2.58% abnormal return for mergers involving public targets over a thirty-six month window after completion of the deal. Their main contribution is to note that glamour acquirers (those with low book-to-market equity ratios) of public firms underperform on that same horizon by -10.82% while value acquirers (those with high book-to-market equity) overperform by +9.87%. They argue that this effect potentially supercedes the effects of method of payment observed in many studies whereby cash acquirers typically outperform acquirers using stock as consideration because glamour acquirers use cash more frequently than value acquirers. They argue that managers of glamour firms are more likely to suffer from hubris and overestimate their own ability to manage the assets of the target firm. They interpret their results as consistent with the performance

extrapolation hypothesis first introduced by Lakonishok, Shleifer and Vishny (1994) whereby investors extrapolate performance too far into the future resulting in an eventual reversal to fundamental value.

From the standpoint of appropriately measuring abnormal returns, Mitchell and Stafford (2000) provide the most current and state-of-the-art technique. Not only do they present evidence in favor of the use of the calendar-time methodology of Jaffe (1974) and Mandelker (1974), they apply many different techniques to a sample of mergers from 1958 to 1993. Specifically, they apply the buy-and-hold strategy with bootstrapping adjustments suggested by Ikenberry, Lakonishok and Vermaelen (1995) as well as the application of the Fama and French (1993) three-factor model with adjustments to the intercepts to reflect the fact that the asset pricing model cannot fully explain the returns of all twenty-five size and book-to-market portfolios that the model was intended to predict. The adjusted alphas mitigate the abnormal performance attributed to model misspecification and provide a clearer picture of the abnormal performance due strictly to the event in question. The greatest concern of Mitchell and Stafford (2000) is the non-independence of observations in samples of corporate events such as mergers, seasoned equity offerings and share repurchases. While the bootstrap procedure reduces the bias associated with assuming a normally distributed abnormal return test statistic, the issue of non-independence actually increases in sample size as the covariance term of the standard deviation of the statistic eventually dominates the own-variance component. They conclude that tests for abnormal returns should be conducted using the calendar-time method. They do admit, however, that the calendar-time method is not without its own concerns (including heteroskedasticity, the assumption that factor loadings remain constant through time, equal weighting of each month and low power); however, unlike the issue of non-independence, these issues can be solved econometrically with relatively standard robustness checks. Calculation of adjusted CTARs reveals that many of the market efficiency contradictions proposed in the literature of post-merger returns are spurious. With calendar-time portfolios, the only subsample of acquirers to statistically underperform are those offering stock consideration, but even this underperformance becomes only marginally significant

when calendar-time portfolios are value-weighted. They find no evidence to suggest that value acquirers outperform glamour acquirers.

Megginson, Morgan and Nail (2003) argue that corporate focus is the main determinant of post-merger performance. Their results show that mergers of a diversifying nature underperform those of a focusing nature by significant 10.99% in the first twelve months after merger completion and by an additional 17.67% and 21.58% (both significant) in the subsequent two twelve-month periods respectively. Similarly, they find that cash acquirers significantly outperform stock acquirers and, contrary to Rau and Vermaelen (1998), that there is not significant difference between glamour and value acquirers. Whereas Gregory (1997) and Agrawal, Jaffe and Mandelker (1992) defined a merger as conglomerate in nature if the bidder and target differ in their two-digit SIC code, Megginson, Morgan and Nail (2003) develop a continuous Herfindahl index based on the multiple lines of business of both the bidder and target. They argue that this is a better metric from which to gauge corporate focus, and they even incorporate the notion of business segments into their matching procedure in order to form control portfolios. Perhaps the most striking aspect of their study is the construction of their sample. From the universe of firms making acquisitions from 1977 to 1996, they remove all acquirers who undertake confounding events during the period of analysis (including capital structure changes, etc.). As a result, their sample size is small compared with the number of total mergers that occurred during that period.

2.4 The Interaction of Mergers and Internal Governance Mechanisms

Corporate governance mechanisms are intended to more closely align the potentially divergent interests of managers and shareholders. This divergence exists because of the separation of ownership and control (the principal-agent relationship) in public U.S. corporations. Generally, governance mechanisms are classified as either external or internal. External mechanisms include both the market for managerial labor and the market for corporate control. Managers posses reputational capital which may or may not allow them to find employment if they do not perform well in their role as

agent; therefore, the manager has an incentive to align his or her interests with those of the firm's shareholders. The market for corporate control disciplines poorly performing managers by removing them from their positions via mergers, tender offers or proxy fights. Of course the market for managerial labor and the market for corporate control are not always mutually exclusive or distinct mechanisms. In many instances, they are employed simultaneously.

In general, there are five governance mechanisms which are internal to the firm. First, proper executive compensation may reduce the agency costs associated with differences between shareholders and managers arising from differences in managerial preferences for risk and in investment horizons. A manager who is compensated via performance-based pay on a correct time horizon should have a preference for risk and an investment horizon that is in keeping with shareholder value maximization. Second, the mechanism of insider ownership accomplishes similar goals to those of compensation. In the absence of managerial entrenchment, a higher level of ownership by inside executives should result in a decrease in the agency costs associated with differential risk preferences and investment horizons. Third, the members of the board of directors act as shareholder representatives in the duty of overseeing and disciplining management. While not directly involved in the day-to-day operations of the firm, the board's ultimate power lies in its ability to hire and fire top members of the company management team. They are also the approval authority for any dividends that the firm pays. Fourth, large outside blockholders provide an additional monitoring role. While it is too costly for a smaller shareholder to actively monitor the actions of managers, larger shareholders typically have both the means and the incentive to do so. Finally, debt and dividends decrease the amount of free cash flow available to managers after the acceptance of positive NPV projects. Both require managers to disgorge cash to appropriate claimants of the firm's cash inflows rather than allowing them to squander it on pet (negative NPV) investment opportunities. Of course, each of these mechanisms (and the two external mechanisms discussed above) is not without their own costs as well.

There is evidence to support the notion that corporate governance is related to long-term stock returns. Gompers, Ishii and Metrick (2003) examine shareholder protection from the perspective of management-friendly corporate charter characteristics and form a governance index from twenty-four potential firm antitakeover provisions and state laws during the 1990s. Specifically, for the existence (absence) of each of the twenty-four management-friendly (shareholder-friendly) provisions, a firm receives one point. The index for each firm is then simply the sum of the points derived from each provision. While this method does not weight each provision by its relative importance, its equal weighting allows for a tractable measure of strong versus weak shareholder protection. Firms are then categorized into deciles based on their index values. A portfolio that is long in democracies and short in dictatorships earns an annual abnormal return of 8.5% when the Carhart (1997) four-factor model is used as a benchmark for expected returns. The long and short positions appear to contribute almost equally to this abnormal return. While they interpret the possible causality of this result with caution, their evidence is generally consistent with the notion that these antitakeover provisions create higher agency costs. In support of this hypothesis, they show that firms with weaker shareholder protection have a greater amount of capital expenditures and a greater incidence of being an acquirer of another firm. They state that an interpretation of their results is that "[weak shareholder protection] firms engaged in an unexpectedly large amount of inefficient investment during the 1990s" (p. 136).

While the research on corporate governance and long-run stock returns is relatively new, there has been substantial work on corporate governance in general and its impact on initial market reactions to mergers and acquisitions indicating that governance could potentially matter on a longer horizon. In establishing the existence of agency problems at acquiring firms, Morck, Shliefer and Vishny (1990) argue that bidding managers overpay for targets that offer them a higher level of personal benefits. In motivating their study, they make the following statement:

> While it is incorrect to say that managers make investment decisions without regard for market value consequences, it is also incorrect to say that existing monitoring and control devices keep managers from pursuing non-value-maximizing objectives. (p. 32)

Their results show that contrary to the predictions of Roll's (1986) hubris hypothesis of takeovers, managers of firms that have recently performed well make better acquisitions. Managers who are buying targets that have recently done well do not make better acquisitions, and conglomerate mergers were not well received in the 1980s. They interpret this evidence as consistent with the existence of agency problems in many acquiring firms. If, in fact, these problems exist and governance mechanisms are effective, we should observe firms with good governance making better acquisitions.

Corporate governance could matter because of recent changes in the structure of the mechanisms themselves. While the effectiveness of these changes is still under scrutiny, all of the aforementioned internal governance mechanisms have undergone large changes over time. As an example, there has been a substantial increase in the level of ownership of inside management over the last couple of decades. Holderness, Kroszner and Sheehan (1999) show that managerial ownership has increased significantly since 1935 and that ownership has not risen as a result of ownership being a substitute for other mechanisms such as incentive-based pay and the market for corporate control. According to the classical agency model of Jensen and Meckling (1976), an increased level of ownership by inside managers should result in lower agency costs. In fact, Morck, Shleifer and Vishny (1988) and McConnell and Servaes (1990) find that firm value (measured by Tobin's *Q*) increases with the level of insider ownership, but only up to a point. For higher levels of inside ownership, firm value appears to decrease. Therefore, there is empirical evidence that a firm might have a level of inside ownership that is "too high". In the context of the market for corporate control, Lewellen, Loderer and Rosenfeld (1985) show that announcement period abnormal stock returns are positively related to the percentage of stock ownership of bidder management. Their measures of ownership include Jensen and Meckling's

(1976) alpha – the percentage ownership of senior management - and two cost/benefit indices intended to more accurately capture the benefits of making a poor bid as well as the costs associated with it. They use the ratio of the dollar value of management's shareholdings divided by their current compensation and the ratio of the expected annual income from shareholdings to current compensation. Their results hold for each of the three measures of ownership. Agrawal and Mandelker (1987) also show that the ownership of insiders is higher for firms that chose mergers (and divestitures) that increase the variance of the firm's stock returns and hence the value of the firm's shares.

With regard to management compensation, Hall and Liebman (1998) challenge the Jensen and Murphy (1990) finding that CEO pay is relatively insensitive to changes in shareholder wealth. Specifically, Hall and Liebman (1998) examine the pay-performance sensitivities of CEOs over the past two decades and find that salary and bonuses have doubled since the early 1980s. Stock option grants have also increased in value by a median amount of 683.0%. It wasn't until 1985 that the median CEO even received a single stock option grant. They estimate that a 10% increase in firm value results in an increase in the median CEOs salary and bonus of $25,000. This same 10% increase in firm value results in a $1.25 million increase in the value of the CEOs equity holdings and stock option grants. This is a marked difference from the Jensen and Murphy (1990) finding that a $1,000 change in shareholder wealth results in a $3.25 change in total CEO compensation. Such an increase in the performance-related pay of executives over the past few decades should manifest itself in fewer agency problems between inside management and outside shareholders. Managers in more recent times should be better motivated to make investment decisions (such as acquisitions) that increase value. Of course the pay structure itself could become a negative NPV project as well.

Hall and Liebman (2000) then examine tax law changes concerning CEO pay and find that regulatory changes (such as changes in tax rates and the "million dollar rule") have had only a modest impact on the decision to pay CEOs on a more performance-related basis.

With regard to the market for corporate control, for a sample of bank mergers from 1986 to 1995, Bliss and Rosen (2001) find that CEOs with more stock-based compensation were less likely to make an acquisition at all. They also report that for their sample of completed mergers, compensation increased for managers with their pay tied to the size of the firm despite the significant negative market response to the deal during the short-term announcement period.

The monitoring role of outside blockholders has changed recently as well. Specifically, Gompers and Metrick (2001) find that large institutional investors doubled their share of the stock market from 1980 to 1996, mainly due to an increase in holdings by mutual funds and investment advisors. By 1996, these large institutions owned more than half of the total equity market in the U.S. If it is less costly for large outside shareholders to monitor managers than for smaller atomistic shareholders, one should observe managers of firms with a greater percentage of large outside shareholders making better investment decisions than managers of firms with a smaller percentage of outside shareholders because of the more active monitoring role served by the block shareholders. In fact, Brickley, Lease and Smith (1988) find that large blockholders more actively vote on antitakeover proposals than do smaller individual investors, and the direction of their voting is in keeping with maximization of shareholder value rather than being cozy with management. McConnell and Servaes (1990) find a significantly positive relation between firm value and the percentage ownership held by outside blockholders. Woidtke (2002) delineates between public and private pension funds and finds a positive relation between private pension fund ownership and overall firm value after controlling for endogeneity.

The structure of boards of directors has changed over the past few decades as well. The most thorough analysis of these changes is provided by Huson, Parrino and Starks (2001). They report that from 1971 to 1994, boards of directors changed to include a greater percentage of outsiders and average board size decreased.[2]

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[2] Huson, Parrino and Starks (2001) also report that executive compensation changed to include more performance-based incentives and that outside blockholders exerted more external pressure.

While Huson, et. al. (2001) do not attribute their observed increase in CEO removal to the effectiveness of various corporate governance mechanisms, Byrd and Hickman (1992) find that announcement returns for tender offer transactions are greater for firms with boards dominated by non-affiliated outsiders than for firms whose boards are comprised mostly of insiders or affiliated outsiders. This finding is not linear, however, as announcement returns for firms with too many independent outside directors is actually negative. While their finding of a relation between tender offer announcement returns and board independence is interesting, perhaps their greatest finding is that their results are sensitive to properly classifying directors as insiders, affiliated outsiders (grey members), or independent outsiders. This more precise measurement of board independence allows them to eliminate much of the noise associated with the unknown monitoring role of affiliated outside directors.[3]

In a survey and examination of corporate governance and mergers during the 1980s and 1990s, Holstrom and Kaplan (2001) state that "the evidence strongly suggests that U.S. corporations have voluntarily pursued shareholder-friendly policies in the 1990s" (p. 136). This overall improvement in corporate governance was a main reason for the more friendly nature of the merger transactions of the 1990s compared with the more hostile deals observed in the 1980s. For example, the increase of performance-related compensation contributed to manager support of value increasing acquisitions. Holstrom and Kaplan (2001) also argue that the 1980s were marked with the "pain" associated with dismantling the most inefficient of the conglomerates formed in earlier decades. The restructuring efforts of the 1990s were instead geared toward benefiting from growth opportunities in new industries.

To this point, the discussion has developed around the evidence which suggests that governance affects firms' investment decisions (namely corporate control transactions). However, there is also evidence that governance mechanisms may be ineffective or less effective than they should be. Holstrom and Kaplan (2003) cite

[3] Cotter, Shivdasani and Zenner (1997) examine the independence of target boards in tender offers and find that independent boards are associated with larger offer premiums, and larger target shareholder gains over the entire tender offer period.

anecdotal evidence of recent governance failures at Enron, WorldCom, Tyco and others. Regardless of whether or not this evidence is supported from a statistical and economic perspective, they point to recent legal and regulatory changes that have been enacted in an effort to "fix" the apparent shortcomings of corporate governance in U.S. firms. Specifically, the Sarbanes-Oxley Act of 2002 created new rules pertaining to boards of directors, shareholder monitoring and executive compensation. For example, audit committees must now be comprised solely of outside directors, financial and insider trading disclosures have become more stringent and the possibility of managers profiting from misconduct has been reduced by forcing them to abandon ownership positions that are beneficial once misconduct has been substantiated.

The federal government is not the only institution mandating changes in corporate governance. The NYSE and NASDAQ have both submitted proposals in the hopes of strengthening the governance of their listed firms. These proposals suggest a much greater role for independent directors including their service on compensation and nominating committees. The proposals also call for equity compensation plans to be approved by all shareholders, and they suggest that a majority of directorships be held by non-affiliated outsiders who meet regularly without the presence of inside directors.

Perhaps the most critical view of corporate governance mechanisms is given by Jensen (1986, 1988, 1993). He argues that the takeovers of the 1980s were a result of a failure of corporate governance mechanisms to properly motivate managers. Instead, managers were allowed to finance losing operations with the free cash flow generated from more profitable operations within the firm (Jensen (1986)). Boards of directors failed to see the need for exit due to the excess capacity created by recent increases in productivity. Jensen (1993) argues that boards are too cordial in their approach to disciplining management, they are too large to be effective and they are often more concerned with minimizing liability than they are with the pursuit of value creation. In the very worst cases, CEOs also serve as board chairman (whose main function is to monitor the CEO). Such boards, combined with lack-luster outside block shareholder oversight, allowed cross-subsidization of diversified firm operations to continue. The

market for corporate control in the 1980s was a way in which to eliminate the inappropriate use of firm free cash flow. Jensen (1993) goes so far as to predict the emergence of the leveraged buy-out (LBO) firm as the preeminent business form of the future due to the increased effectiveness of its internal governance mechanisms to eliminate cross-subsidization. Harford (1999) supports the Jensen (1986) free cash flow hypothesis of takeovers. He finds that the portion of cash-rich firms making diversifying acquisitions is significantly higher than for firms will less cash. Targets of firms with larger amounts of cash on hand are also less likely to attract multiple bidders. After completion of the merger, operating performance of the newly formed firm deteriorates. Harford concludes that cash-rich firms undertake value-destroying investment decisions.[4]

Finally, as mentioned previously, Huson, Parrino and Starks (2001) find that many of Jensen's (1993) suggestions have come to fruition in the changing dynamics of governance characteristics. Board sizes have decreased, and there is greater percentage of outside directors on the average board. External pressure has increased from outside institutional shareholders. However, those changes have not had a significant impact on the likelihood of CEO removal and outside replacement. At least with regard to this particular decision, they suggest that improvements in corporate governance haven't improved the quality of the monitoring that was intended by the changes.

[4] Opler, Pinkowitz, Stulz and Williamson (1999) provide an in-depth study of the tradeoff between the costs associated with free cash flow and the benefits of maintaining financial slack.

CHAPTER III

HYPOTHESES DEVELOPMENT, DATA AND METHODOLOGY

3.1 Hypotheses Development

The central proposition of this paper is that firms with good internal governance structures make better acquisitions due to the decreased agency costs associated with the separation of ownership and control. As such, three internal governance characteristics are analyzed: managerial compensation, managerial ownership, and large outside shareholder ownership.

Management Compensation: Performance-based pay for inside executives serves to reduce their divergent preferences for a shorter investment horizon and their own personal preferences for avoiding risk. For example, managers with an inappropriately structured compensation structure have an incentive to maximize shareholder value during their tenure of employment at the expense of shareholder value after their departure. In the absence of equity incentives, managers have an incentive to make less risky investments because their own undiversifiable human capital is tied to the firm. Option or stock-based compensation mitigates these problems, and one should observe better acquisitions (and other capital budgeting decisions) by firms who compensate their executives more heavily on a performance-related basis.

> H_1: On a twelve- to sixty-month post-merger horizon, acquirers with CEOs compensated more heavily on an incentive basis (options and grants) outperform acquirers who compensate CEOs via a greater percentage of base salary and bonus in the total compensation package.

To test H_1, I calculate a variable ***Comp*** for each acquiring firm which is defined as the percentage of total CEO compensation value that comes in the form of equity-based pay.

$$Comp = \frac{Value\,of\ Restricted\ Stock\ Grants\ and\ Stock\ Options\ Received\ in\ Prior\ Year}{Value\,of\ All\ Cash\ and\ Equity\ Compensation} \tag{3.1}$$

Data for this variable are collected from Standard and Poor's ExecuComp database.

If performance-based pay serves to align the interests of shareholders and managers, we should observe a positive relation between the long-run abnormal returns and ***Comp***. If incentive pay in the form of equity does not reduce the agency problems of differential horizons and risk preferences, we would expect the coefficient on ***Comp*** in a multivariate regression to be insignificant.

Management Ownership: Jensen and Meckling (1976) state that "the most important [agency] conflict arises from the fact that as the manager's ownership claim falls, his incentive to devote significant effort to creative activities such as searching out new profitable ventures falls" (p. 90). They therefore predict a positive monotonic relation between management ownership and firm value.

Stulz (1988) presents a model whereby the fraction of managerial control of voting rights increases firm value for low levels of management control because the management objections to potential acquirers will increase the premium offered for the firm's shares. At higher levels of control over voting rights, the value of the firm should decrease with increased levels of control over voting rights because the probability of a successful takeover is reduced and eventually eliminated due to managerial entrenchment. In other words, there is some interior optimal percentage of managerial control that maximizes the value of the firm. Morck, Schleifer and Vishny (1988) and McConnell and Servaes (1990) assume that management ownership serves as an adequate proxy for the percentage of voting rights under management's control and test the Stulz (1988) model. Both papers utilize Tobin's *Q* as a proxy for firm value and find a positive relation between insider ownership and firm value for low levels of firm ownership but a negative relation for higher levels of ownership.

> H_2: On a twelve- to sixty-month post-merger horizon, acquirers whose officers and directors own a larger percentage of company shares outperform acquirers whose CEOs own a lesser percentage of their firm's shares.

To test H_2, I calculate the variable ***InsideOwn***, defined as the percentage of total company shares held by the top executives and directors reported by the firm in company proxy statements. These data are collected from Disclosure CD-ROM (commonly referred to as Compact Disclosure).

Jensen and Meckling (1976) predict a positive relation between long-run acquirer returns and ***InsideOwn***, while Stulz (1988) predicts a positive relation only for lower levels of inside ownership. Entrenched managers (of acquirers as well as targets) should not be as affected by the mechanism of inside ownership if they are able to garner personal non-pecuniary benefits from a merger whose value exceeds the personal wealth effects of a value-destroying deal. Therefore, Stulz (1988) predicts a negative relation for larger values of ***InsideOwn***.

Outside Block Shareholders: Shleifer and Vishny (1986) present a model of large outside shareholders and monitoring functions they perform. In their model, large shareholders are able to bring about changes in the firm that provide an increase in value that is large enough to outweigh the costs of the monitoring and oversight. Their model predicts that an increase in the level of ownership by a large shareholder increases the likelihood of being acquired, but they do not speak to the effects of being an acquirer. They also ignore potential interactions between multiple blockholders which might be important for a sample of acquiring firms since acquirers tend to be larger firms with a greater number of institutional shareholders. However, if large shareholders benefit from monitoring management, one would expect acquisitions by firms with a higher level of large outside blockholder ownership to be better investments.

H_3: On a twelve- to sixty-month post-merger horizon, acquirers with a greater percentage of company shares held by large outside blockholders outperform acquirers with a lesser percentage of outside ownership.

To test H_3, I gather data from Compact Disclosure on the level of ownership held by outside blockholders that are reported on quarterly form 13F of the Securities and Exchange Commission (SEC) indicating that they have acquired positions valued at greater than $200,000 or positions of greater than 10,000 shares of the sample firm's outstanding shares. I then form the variable ***InstOwn*** as the percentage of the total number of outstanding shares held by outside block shareholders.

Empirically, Pound (1988) shows that proxy fights are a less preferred method for gaining corporate control because of the three factors: 1) the inherent difficulty in mounting a successful fight against incumbent managers, 2) the conflict of interest that potentially exists between many large shareholders that have other business dealings with the firm and 3) the possibility that the initiator of a proxy fight is not as serious about the issue in question because a lesser amount of resources is needed to accomplish control than is necessary for a successful merger or tender offer. Focusing on his second factor, it is entirely possible that outside block shareholders may be too cozy with current management to properly monitor their actions with regard to an acquisition decision. Additionally, large outside shareholders usually suffer from their own agency problems that could potentially weaken the monitoring role which they are credited with serving. In either of these instances, we should observe an insignificant or negative coefficient on ***InstOwn*** in multivariate regressions.

Contradictory to Pound's (1988) evidence that some blockholders are too cozy with management, McConnell and Servaes (1990) and Woidtke (2002) find statistically reliable evidence of a positive relation between the level of institutional ownership and overall firm value. If, in fact, large outside shareholders properly monitor managers, we should observe a positive sign on the coefficient of ***InstOwn***.

3.2 Data

The sample for this study comes from the Securities Data Corporation (SDC) *Mergers and Acquisitions Database*. It includes all completed mergers and acquisitions of one hundred percent of assets from 1993 to 2000. In order to be included in the sample, both the target and the bidder must be listed on the NYSE, AMEX or NASDAQ

exchange. Both the bidder and target must have return data on the Center for Research in Security Prices (CRSP) monthly tapes with a CRSP share code of 10 or 11 (this excludes deals involving American Depository Receipts (ADRs), Real Estate Investment Trusts (REITs) and closed-end mutual funds). Additionally, book equity values are required from the annual Compustat files. Deals involving regulated utilities or financial institutions are removed to avoid contamination of the results from the regulatory shocks involved in those two particular industries.[5] The final sample is 484 mergers and tender offers completed between 1993 and 2000. For a detailed description of the sample construction, see table 2.

SDC lists a total of 2,262 completed mergers or tender offers that were completed between January 1, 1993 and December 31, 2000. Of these deals, 326 do not have either the acquirer or target permno available in the CRSP monthly stock return files. Of the remaining deals, 722 involve either a financial firm or a regulated utility (SIC codes 49 or 60 to 69), 62 deals involve an acquiring firm with a missing or negative book value of common equity in Compustat. Finally, 668 acquirers are not tracked by Standard and Poor's in the ExecuComp database. The final sample consists of 484 deals (344 mergers and 140 tender offers). SDC provides data on the announcement date, the completion date, acquirer and target six-digit cusip, total deal value, form of payment and whether or not the deal was classified as a merger or tender offer.

Returns on 30-day treasury bills are taken from the CRSP monthly treasury index files. Data on the market risk premium and additional factors of the various asset pricing models are gathered from the website of Ken French at Dartmouth: http://mba.tuck.dartmouth.edu/pages/faculty/ken.french/. Specifically, he provides returns on the zero investment portfolios based on size (SMB), book-to-market equity (HML) and momentum (UMD).

For the years 1992 to 2001, compensation data are taken from the Standard and Poor's ExecuComp database. Management and director shareholdings, as well as ownership of large outside shareholders are taken from Compact Disclosure. In each

[5] For a detailed analysis of regulatory shocks and their impact on the market for corporate control, see Mitchell and Mulherin (1996), Andrade, Mitchell and Stafford (2001) and Holstrom and Kaplan (2001).

instance, governance data are collected as of the most recent reporting date prior to the completion of the merger. I chose twelve months as a cutoff because firms are required to submit proxy information every twelve months to the SEC.

Table 2
Sample Selection.

The sample of firms is taken from Securities Data Corporation (SDC) Mergers and Acquisitions Database of all merger and tender offer transactions from 1993 to 2000. Forms of the deal include mergers, acquisition of assets and acquisition of majority interests. Both acquirer and target are required to be listed on the NYSE, AMEX or NASDAQ. Proxy fights are excluded. Firms are then required to have sufficient data on both CRSP and Compustat. Proxy information regarding firm governance characteristics is also required to be found in Standard and Poor's ExecuComp Database.

Screen/Filter	Number of Deals	% of Lost Observations
Completed Mergers, Acquisitions of Assets and Acquisitions of Minority Interests listed in the Securities Data Corporation (SDC) *Mergers and Acquisitions Database* from January 1, 1993 through December 31, 2000.	2,262	
CRSP Permno unavailable for Acquirer or Target	(326)	18.34%
Number of Deals Involving a Financial Firm (2-digit SIC Codes 60 to 69)	(639)	35.94%
Number of Deals Involving a Regulated Utility (2-digit SIC code 49)	(83)	4.67%
Missing values for Compustat Item #60 (Common Equity – Total)	(29)	1.63%
Negative Value for Compustat Item #60 (Common Equity – Total)	(33)	1.86%
Data unavailable in ExecuComp Database	(668)	37.57%
Final Sample	484	

Limiting information to the previous twelve months also has the advantage of capturing any last minute changes in governance that the firm may undertake due to the corporate control transaction (such as re-pricing of executive stock options). This procedure has the added advantage of ensuring no look-ahead bias in the analysis.

Summary statistics for the sample are provided in table 3. Panel A provides information about the individual acquirers as well as several deal characteristics that are included as cross-sectional variables in the analysis. The reported variable ***Days b/w*** measures the number of trading days that occur between the announcement and completion of the merger. There is an average (median) of about 79 (66) days between public revelation and deal completion, and approximately 98.0% of the mergers in the sample are completed within twelve months of the announcement of the deal. The

average market capitalization of an acquirer in the sample is $25.39 billion with an average book value of assets of $3.6 billion. The average target firm is 15.8% of the size of the acquirer when measured using market capitalization to capture size, and the typical acquirer has a book-to-market equity ratio of 0.30. Identified by a difference in two-digit SIC codes of the acquirer and target, 43.4% of the sample is diversifying in nature while the remainder of the mergers occur between firms with the same two-digit SIC code. Acquirers use equity as at least a portion of the consideration given in 62.0% of the cases, and 28.9% of the deals are structured as tender offers.

Statistics on governance characteristics are also given in Panel A of table 3. In the twelve months prior to the acquisition, the average acquiring CEO receives 47.5% of his or her total compensation in the form of equity incentives. It is interesting to note, however, that many CEOs included in the acquirer sample receive no equity incentive compensation in their reported pay in the year prior to the deal. The 10th percentile of the variable ***Comp*** is still 0.00%. These compensation data compare with the sample of Hall and Liebman (1998) in which they report a mean equity incentive percentage of 48.4% for the year 1994 (the last year of their study). Their sample is also skewed by outliers as they report a median value of 23.64% for the same statistic (compared with 31.6% for the acquirer sample). The difference is explained by the fact that 1994 is the last year of the Hall and Liebman study while the period of analysis for this study begins in 1993 and ends in 2000. Equity incentives as a percentage of total CEO compensation have increased sharply over the later period.

The mean value of the variable ***InsideOwn*** is 8.10% which is higher than one would expect for a sample involving firms as large as the ones here; however, the median value of 2.60% reveals that a few outliers are distorting the mean. Of the 484 firms in the sample, only 390 have data for officer and director ownership available in Compact Disclosure. Holderness, Kroszner and Sheehan (1999) report a mean (median) value of 21.1% (14.4%) officer and director ownership in 1995 for the full sample of 4,202 firms for which there is data available from Compact Disclosure. The lower level of ownership prevalent in the sample is due to the fact that the typical sample firm is

Table 3
Sample Descriptive Statistics.

Descriptive statistics of acquiring firms is provided. The sample is divided into mergers and tender offers. Sample firms are taken from Security Data Corporation's Mergers and Acquisitions Database which also provides data on deal values and method of payment. *MktCap* is the market value of the firm's outstanding equity as of the last trading day of the month prior to the merger announcement. *Assets* is the book value of the firm's assets as of the most recent Compustat listing prior to the announcement but not more than twelve months prior. *RelSize* is the size of the target relative to that of the acquirer. *B/M* is the book to market ratio of the acquirer. *Diversify* is an indicator variable equal to one if acquirer and target have different two-digit SIC codes. *Stock* is an indicator equal to one if the acquirer used equity as all or as a portion of the consideration. *Tend* is an indicator equal to one if the deal is structured as a tender offer. Governance variables include *Comp* defined as the percentage of CEO compensation consisting of equity incentives during the twelve months prior to the merger announcement. *InsideOwn* is the percentage ownership of all officers and directors as reported by Compact Disclosure within twelve months prior to the announcement of the merger. *InstOwn* is the percentage ownership of institutional investors as reported by 13-F filings to the SEC in the twelve months prior to the announcement. *Days b/w* is the number of trading days between the announcement and the completion date of the merger.

Panel A: Cross Sectional Variables

	N	Mean	Std. Dev.	Median	10th Pctl	90th Pctl	Min	Max
MktCap ($MM)	484	25,385.99	59,881.03	4,396.25	496.22	76,200.66	91.06	524,351.58
Assets ($MM)	484	3,577.18	7,135.57	999.56	146.11	9,898.00	22.67	78,927.00
RelSize	484	0.16	0.25	0.07	0.00	0.41	0.00	2.48
B/M	484	0.30	0.29	0.22	0.07	0.59	0.01	2.83
Diversify	484	0.43	0.50	0.00	0.00	1.00	0.00	1.00
Stock	484	0.62	0.49	1.00	0.00	1.00	0.00	1.00
Tend	484	0.29	0.45	0.00	0.00	1.00	0.00	1.00
Comp	484	0.48	0.32	0.54	0.00	0.85	0.00	1.00
InsideOwn	390	0.08	0.12	0.03	0.00	0.24	0.00	0.74
InstOwn	429	0.64	0.19	0.66	0.39	0.85	0.02	1.00
Days b/w	484	78.80	0.55	66.00	0.29	141.00	1.00	473.00

Panel B: Deal Characteristics

				Deal Structure		Consideration			
Year Acquisition Announced	N	Average Deal Value (millions)	Total Deal Value (millions)	Merger	Tender Offer	Cash	Stock	Hybrid	Other
1992	2	n/a	n/a	2	0	1	0	1	0
1993	13	201.66	2,621.59	11	2	4	4	3	2
1994	17	252.94	4,299.91	11	6	6	9	2	0
1995	42	1,423.62	58,368.40	32	10	12	24	5	1
1996	58	1,290.71	74,860.97	42	16	20	27	10	1
1997	56	593.16	32,030.46	41	15	18	26	9	3
1998	89	2,719.46	242,032.02	65	24	30	36	19	4
1999	116	2,907.71	337,293.84	83	33	43	48	23	2
2000	91	2,345.19	213,412.26	57	34	36	37	17	1
Total	484	2,014.45	964,919.43	344	140	170	211	89	14

much larger than average. One would expect a larger firm to have a lower level of officer and director ownership.

Likewise, information is available on the outside blockholders for 429 of the 484 sample firms. The variable ***InstOwn*** has an average value of 63.9%. The median institutional ownership level of 66.4% is higher than the mean, implying that there is a large presence of outside block shareholders in the sample firms. Gompers and Metrick (2001) report that institutions owned only 51.6% of the total market value of all listed firms in 1996.

Panel B provides statistics on the sample by year. Consistent with Andrade, Mitchell and Stafford (2001), the number of deals increases in the later 1990s and the average value of those deals increases as well. In contrast to the hostile nature of takeovers in the 1980s, the sample demonstrates a relatively constant balance between deals structured as either mergers or tender offers throughout the period. Lastly, in each year but 1992, stock was the most popular method of payment in the acquisition market.

3.3 Methodology

Announcement Date Analysis: In order to provide a more complete picture of how the market incorporates news of the merger into the stock price, I first conduct a standard announcement date event study as suggested by Brown and Warner (1995). Specifically, the abnormal return for each sample firm is calculated each day surrounding the announcement as the return of the sample firm less the return of the value-weighted CRSP market index including all distributions. The abnormal return for each event day is then averaged across all firms in the sample to calculate an overall average abnormal return for that date:

$$\overline{AR}_t = \frac{1}{N}\sum_{i=1}^{N}\left(R_{it} - R_{Mt}\right) \tag{3.2}$$

where N is the number of firms in the sample, R_{it} is the return on firm i on day t, and R_{Mt} is the return on the market proxy.

To assess the impact of corporate governance on the incorporation of announcement information, I repeat the above procedure for subsamples of acquirers created by partitioning the sample according to the three governance variables (***Comp***, ***InsideOwn*** and ***InstOwn***). For example, an acquirer is categorized as having a high level of incentive compensation if the value of ***Comp*** for that firm is above the sample median in that year. For completeness, median abnormal returns are also reported.

Looking ahead somewhat, I then conduct multivariate regressions of the mean abnormal announcement date return on the variables hypothesized to explain the cross-sectional variation in long-run abnormal stock returns. A detailed description of the variables used in this analysis of announcement date returns is provided below in the discussion of long-run return analysis.

Calendar-time Analysis: The univariate tests of long-run market efficiency employed in this paper are derived from the calendar-time analysis of Mitchell and Stafford (2000) and are intended to expand their findings. They argue that other methods of calculating abnormal returns fail to account for the non-independence of event firms. Subsequently, standard errors in the denominators of the *t*-statistics of the abnormal return estimates are too small because the covariance term is ignored. Bootstrapping procedures recommended by other researchers to improve the distribution of the statistic (toward normality) actually increase the problem of non-independence because the covariance term of the standard error estimate is increasing in sample size. To solve the more problematic issue of non-independence, Mitchell and Stafford (2000) recommend the calendar-time analysis originally developed by Jaffe (1974) and Mandelker (1974) in which the cross-correlation of event firms is automatically accounted for in the portfolio variance.

For each month in calendar-time, either an equally-weighted or value-weighted portfolio of all firms is formed including all firms that have completed a merger in the past 12, 36, or 60 months. Since I am interested in the post-merger performance of newly merged firms, the period of analysis begins on the first trading day of the month subsequent to the actual completion date. Equally- or value-weighted portfolio excess

returns are then calculated by subtracting the thirty-day Treasury bill rate from the equally- or value-weighted portfolio return. The result of this process is a time-series of calendar-time portfolio excess returns over and above the risk-free rate of interest.

A time-series regression of the portfolio excess returns on the Carhart (1997) four-factor model is then performed according to the following specification:

$$R_{it} - R_{ft} = \alpha_i + b_i\left(R_{Mt} - R_{ft}\right) + s_i\left(SMB_t\right) + h_i\left(HML_t\right) + u_i\left(UMD_t\right) + \varepsilon_i \qquad (3.3)$$

where ($R_{it} - R_{ft}$) represents the equal- or value-weighted excess return on calendar-time portfolio *i* in month *t*, ($R_{Mt} - R_{ft}$) is the market risk premium for month *t*, SMB_t is the return on a zero-investment portfolio that is long small stocks and short large stocks for month *t*, HML_t is the return on a zero-investment portfolio that is long high book-to-market (value) stocks and short low book-to-market (glamour) stocks for month *t*, and UMD_t is the return on a zero-investment portfolio that is long high return stocks and short low return stocks for month *t*. If the Carhart (1997) four-factor model is a perfect description of expected returns, the intercept (α) is a measure of risk-adjusted abnormal firm performance that is tested with a standard *t*-statistic.

Portfolios of subsamples of event firms are then constructed on the basis of the following characteristics: form of the deal (merger vs. tender offer), method of payment (cash vs. stock), book-to-market equity ratio (value vs. glamour), corporate focus (focusing vs. diversifying), compensation (high vs. low equity incentive pay), officer and director ownership (high vs. low levels of insider ownership), and institutional ownership (high vs. low institutional ownership).

A deal is characterized as a merger or tender offer based upon the designation provided by SDC in the mergers and acquisitions database.

SDC also provides data on the method of payment used to finance the transaction. A deal is labeled as "cash" if it is all cash financed, "shares" if stock financing is used, "hybrid" if both cash and shares are offered and "other" if the deal involves an alternative method of financing (e.g. preferred shares or some other

instrument). The delineation above compares deals involving any level of equity at all versus those using no common equity. Categorization of this design biases against the possibility of finding any results for cash versus stock deals, but as I will show, the effect is still large enough to overcome the bias.

Value acquirers are those whose book-to-market equity ratio (immediately prior to the merger announcement) is above the median value for the sample while glamour acquirers are those with a book-to-market equity ratio below the sample median. To control for temporal changes in the book-to-market ratio of sample firms, I calculate this measure year by year.

A focusing acquisition is defined as one in which both the acquirer and target are within the same two-digit SIC code as identified by CRSP. While somewhat crude, this measure has been used extensively in the merger literature to capture the effects of diversification (see for example Agrawal, Jaffe and Mandelker (1992) or Gregory (1997)).

For the three governance variables (***Comp***, ***InsideOwn*** and ***InstOwn***) I also use median values to determine breakpoints for analysis. For example, firms with values of ***Comp*** that are higher than the sample median are regarded as having a greater level of performance-based pay. Firms below the median are regarded as having a lesser level of performance-based pay. The same classifications are used for ***InsideOwn*** and ***InstOwn***. As with determining value or glamour deals, all determinations are made on a yearly basis to overcome temporal changes in the governance characteristics through time.

Significance of the differences between the above groups of subsamples is determined via a single regression using the following procedure. Equation (3.3) is estimated for each of the subsamples. For example, equations (3.4) and (3.5) represent equation (3.3) for the subsamples of cash and stock acquirers respectively.

$$R_{St} - R_{ft} = \alpha_S + b_S\left(R_{Mt} - R_{ft}\right) + s_S\left(SMB_t\right) + h_S\left(HML_t\right) + u_S\left(UMD_t\right) + \varepsilon_S \tag{3.4}$$

$$R_{Ct} - R_{ft} = \alpha_C + b_C\left(R_{Mt} - R_{ft}\right) + s_C\left(SMB_t\right) + h_C\left(HML_t\right) + u_C\left(UMD_t\right) + \varepsilon_C \tag{3.5}$$

where subscripts S and C and represent cash and stock respectively. Subtracting equation (3.4) from (3.5) yields

$$\begin{aligned}(R_{Ct} - R_{St}) &= (\alpha_C - \alpha_S) + (b_C - b_S)(R_{Mt} - R_{ft}) + (s_C - s_S)(SMB_t) \\ &\quad + (h_C - h_S)(HML_t) + (u_C - u_S)(UMD_t) + (\varepsilon_C - \varepsilon_S) \\ &= \alpha^* + b^*(R_{Mt} - R_{ft}) + s^*(SMB_t) + h^*(HML_t) + u^*(UMD_t) + \varepsilon^*\end{aligned} \tag{3.6}$$

where R_{Ct} and R_{St} represent the mean return of the cash and stock portfolios, and α*, b*, s* and h* represent the difference in the respective parameters of specifications (3.4) and (3.5). The regression specified in equation (3.6) is then performed. Statistical inference of the difference between α_S in equation (3.4) and α_C in equation (3.5) is then made by conducting the following test:

$$H_0: \alpha^*=0. \tag{3.7}$$

The procedure is repeated for each of the subsamples listed above.

Multivariate Analysis: A major contribution of this paper is to analyze the cross-sectional dispersion of long-run firm abnormal returns after the completion of a merger. As such, the portfolio alphas calculated in calendar-time above are not a sufficient measure for inferences about individual firms. Instead, an individual firm measure of abnormal returns is needed. Proper measurement of abnormal return performance is crucial. As described in chapter II, researchers have used a wide variety of benchmarks and return metrics in order to calculate abnormal returns in tests of market efficiency; however, it remains an open-ended question as to the appropriate measure to use on the left hand side of an explanatory regression in an effort to infer something about the cross-sectional variation in abnormal returns. All that is known is that the best measure of market efficiency is an ineffective left hand side specification. As an alternative, this paper utilizes several measures. Reported figures, however, use the value-weighted

cumulative abnormal return (CAR) of the combined firms over and above the value-weighted market return on a 60-month post-merger horizon. Robustness of this measure is discussed later and summarized in a later table.

In order to gauge the importance of corporate governance in the cross-section of long-run post-merger returns, the value-weighted CAR is used as the dependent variable in a multivariate regression. Equation (3.8) provides the specification:

$$CAR_{it} = \alpha_i + \beta'_i X_{t-1} + \delta'_i Z_{t-1} + u_i \tag{3.8}$$

where CAR_{it} is the cumulative abnormal return of firm *i* from month (completion+1) to month (completion+60), α_i is a constant and X_{t-1} is a matrix of governance variables including ***Comp***, ***InsideOwn*** and ***InstOwn***. Z_{t-1} is a set of control variables including, ***TotalAssets*** defined as the book value of assets as of the most recent Compustat entry, ***RelSize*** defined as the market capitalization of the target divided by the market capitalization of the acquirer, the book-to-market equity ratio of the acquirer (***B/M***), ***Diversify*** which is an indicator equal to one identifying diversifying acquisitions, an indicator for ***Stock*** as method of payment and an indicator variable indicating a tender offer (***Tend***).

TotalAssets is intended to control for the effect of firm size without creating a potential multicollinearity problem with the other two variables that utilize market capitalization of the acquirer. ***RelSize*** is included to account for the fact that the relative size of the bidder and target may affect long-run stock returns. One expects a relatively small target (small relative to the size of the bidder) to have less of an effect on the long-run returns of the combined firm than a target that is larger relative to the size of the acquirer.

Acquirer book-to-market equity (***B/M***) is included because Lakonishok, Shliefer and Vishny (1994) find that value firms (those with high book-to-market equity) outperform glamour firms (those with low book-to-market equity). They submit that this result is consistent with a performance extrapolation hypothesis whereby investors extrapolate recent performance too far into the future. Eventually, stock prices revert to

true fundamentals, causing the result. Rau and Vermaelen (1998) report that value acquirers also overperform glamour acquirers, but Megginson, Morgan and Nail (2003) find no significant difference between the two groups of acquirers.

I include an indicator variable denoting acquisitions that are diversifying in nature. Diversification is determined by the two-digit SIC code of both parties. The precedence for the use of this measure is Agrawal, Jaffe and Mandelker (1992) and Gregory (1997); however, Megginson, Morgan, and Nail (2003) create a continuous herfindal index that incorporates multiple business segments of both the acquirer and target. They report that focusing acquisitions overperform those that are diversifying in nature. Gregory (1997) finds no significant difference between diversifying and focusing acquisitions, and although they do not formally test their statement, Agrawal, Jaffe, and Mandelker (1992) report that conglomerate based mergers actually outperform non-conglomerate merger when diversification is measured via a four-digit SIC code.

A dummy variable for equity as method of payment is also included. Myers and Majluf (1984) demonstrate that in an economy characterized by asymmetric information, managers will only issue stock when it is overvalued. Loughran and Vijh (1997) and Megginson, Morgan and Nail (2003) find that cash acquirers outperform stock acquirers on a long-run horizon; however, Franks, Harris and Titman (1991) find no significance between the two subsamples.

Previous research also motivates the inclusion of a dummy for how the deal is structured. Agrawal, Jaffe and Mandelker (1992) and Loughran and Vijh (1997) find that tender offers outperform mergers potentially because of the disciplining effect of tender offers versus direct negotiations in mergers.

CHAPTER IV
RESULTS

4.1 Announcement Date Market Reaction

Results for the announcement date event study are reported in table 4. Panel A reports the results for the full sample of acquirers. The mean abnormal return on the date of merger announcement is a significant -1.02% (t=-4.62). The median abnormal return is also a significant -0.66% (p<0.001). These results are similar to the short-run event studies summarized by Jensen and Ruback (1983) in which a majority of researchers report slightly negative reactions to merger announcements. Of course the explanation of this finding is still a topic of hot debate. Auction theory suggests that bidders suffer from the "winner's curse" and overpay for targets because the true value of the combined entity is not known at the time of the bid. Roll's (1986) hubris hypothesis suggests that acquiring managers overpay for target firms because of their tendency to overvalue their own managerial ability. Under either of these circumstances, the market value of the acquirer has the potential to fall, regardless of whether or not actual operating synergies are created because too much of the created value is ceded to the target firm.

The remainder of table 4 provides results for subsamples defined as low versus high levels of incentive compensation (***Comp***), low versus high levels of insider ownership (***InsideOwn***) and low versus high levels of institutional ownership (***InstOwn***). Again, a firm is considered to have a high level of the variable if the variable takes a value that is greater than the sample median during the year prior to the announcement date. An interesting and consistent pattern emerges in panels B through G of table 4.

Panels B and C provide the mean abnormal return for acquirers with low and high levels of incentive compensation respectively. Firms determined to have low levels of equity incentives have a -0.82% (t=-2.76) abnormal return on average while firms with high levels of equity incentive compensation have a mean abnormal return of -1.21% (t=-3.74). It is interesting to note that the market reaction to the acquirers with

greater levels of incentive compensation is worse than the reaction to the group of acquirer with lower levels of incentive compensation; however, the difference between the two subgroups is an insignificant 0.38% (*t*=0.87).

Panels D and E provide the mean abnormal return for acquirers with low and high levels of insider ownership (***InsideOwn***) respectively. Firms with low levels of insider ownership have a -0.73% (*t*=-2.42) abnormal return on average while firms with high levels of insider ownership have a mean abnormal return of -1.26% (*t*=-3.22). The difference between the two subgroups, however, is once again an insignificant 0.53% (*t*=1.07).

Table 4
Announcement Date Market Reactions to Mergers.

Abnormal (market-adjusted) returns are calculated for sample firms in event time. Day zero is the announcement date of the deal as specified in the Securities Data Corporation Mergers and Acquisitions Database. Panel A provides results for the full sample of firms. Panels B and C provide results for the subsamples of firms identified as having low and high levels of equity incentive compensation. Panel D and E provide results for the subsamples of firms identified as having low and high levels of insider ownership. Finally, panels F and G provide results for the subsamples of firms identified as having low and high levels of institutional ownership. Firms are categorized as having high or low levels of the characteristics in relation to the sample median in each year.

Panel A: Full Sample

		Mean			Median		
Day	N	AR	*t*-stat	Prob > |*t*|	AR	Wilcoxon S	Prob > |s|
-10	484	0.001250	0.8845	0.377	0.001450	2036.0	0.509
-9	484	0.001242	0.9579	0.339	0.001230	2729.0	0.376
-8	484	0.003019	2.1727	0.030	0.000928	3899.0	0.206
-7	484	0.002427	1.8649	0.063	0.003673	7203.0	0.019
-6	484	0.001598	1.2011	0.230	-0.000188	1203.0	0.696
-5	484	0.001784	1.0697	0.285	-0.000332	1069.0	0.729
-4	484	0.000060	0.0461	0.963	-0.001344	-1211.0	0.694
-3	484	-0.000012	-0.0100	0.992	-0.000851	-1150.0	0.709
-2	484	-0.001613	-1.2115	0.226	-0.001633	-5689.0	0.065
-1	484	-0.000802	-0.6102	0.542	-0.001229	-4053.0	0.188
0	484	-0.010163	-4.6241	<.001	-0.006579	-14218.0	<.001
1	484	-0.000644	-0.3321	0.740	-0.000363	-1014.0	0.742
2	484	0.001806	1.2656	0.206	-0.000875	6.0	0.998
3	484	0.000551	0.4332	0.665	-0.001328	-895.0	0.772
4	484	-0.000063	-0.0477	0.962	-0.001321	-2194.0	0.477
5	484	0.000691	0.4796	0.632	-0.000861	-3647.0	0.237
6	484	-0.000187	-0.1676	0.867	-0.000833	-2321.0	0.451
7	484	0.001714	1.4526	0.147	0.000431	3596.0	0.243
8	484	0.001124	0.8818	0.378	-0.000486	668.0	0.828
9	484	-0.000379	-0.3293	0.742	-0.001983	-5164.0	0.093
10	484	-0.002585	-1.7453	0.082	-0.001909	-6610.0	0.032

Table 4 (Continued)

Panel B: Low level of incentive compensation

Day	N	Mean AR	*t*-stat	Prob > |*t*|	Median AR	Wilcoxon S	Prob > |s|
-10	240	0.001554	0.7396	0.460	0.003264	895.0	0.407
-9	240	0.002108	1.1326	0.259	0.000825	909.0	0.400
-8	240	0.003391	2.0159	0.045	0.001184	1503.0	0.163
-7	240	0.002635	1.4563	0.147	0.003638	1950.0	0.070
-6	240	0.000311	0.2037	0.839	-0.000021	187.0	0.863
-5	240	0.000974	0.4535	0.651	-0.001044	346.0	0.749
-4	240	0.000208	0.1200	0.905	-0.001204	-121.0	0.911
-3	240	0.002689	1.6614	0.098	0.001273	1032.0	0.339
-2	240	-0.002092	-1.1013	0.272	-0.001189	-1500.0	0.164
-1	240	-0.001906	-1.1589	0.248	-0.002190	-1432.0	0.184
0	240	-0.008240	-2.7563	0.006	-0.005323	-3422.0	0.001
1	240	0.002112	0.7742	0.440	-0.000094	718.0	0.506
2	240	0.002868	1.3302	0.185	-0.001665	-10.0	0.993
3	240	-0.001461	-0.8855	0.377	-0.003290	-1607.0	0.136
4	240	0.001075	0.5362	0.592	-0.001249	-44.0	0.968
5	240	0.002456	1.0546	0.293	-0.000606	-579.0	0.592
6	240	-0.000502	-0.3067	0.759	-0.003287	-1502.0	0.163
7	240	0.001697	1.0223	0.308	0.000089	705.0	0.514
8	240	0.002608	1.4554	0.147	0.002007	1399.0	0.194
9	240	0.000500	0.3176	0.751	-0.001555	-776.0	0.472
10	240	0.001060	0.6290	0.530	-0.000274	22.0	0.984

Panel C: High level of incentive compensation

Day	N	Mean AR	*t*-stat	Prob > |*t*|	Median AR	Wilcoxon S	Prob > |s|
-10	244	0.000952	0.5012	0.617	-0.000081	73.0	0.947
-9	244	0.000390	0.2156	0.829	0.002468	421.0	0.704
-8	244	0.002653	1.2018	0.231	0.000818	446.0	0.687
-7	244	0.002222	1.1861	0.237	0.003673	1609.0	0.145
-6	244	0.002864	1.3191	0.188	-0.001702	460.0	0.678
-5	244	0.002582	1.0124	0.312	0.000194	227.0	0.838
-4	244	-0.000086	-0.0440	0.965	-0.001484	-512.0	0.644
-3	244	-0.002668	-1.5728	0.117	-0.001872	-1575.0	0.154
-2	244	-0.001142	-0.6106	0.542	-0.002324	-1356.0	0.220
-1	244	0.000283	0.1383	0.890	-0.000082	-564.0	0.610
0	244	-0.012054	-3.7435	<.001	-0.007637	-3713.0	<.001
1	244	-0.003355	-1.2202	0.224	-0.000566	-1240.0	0.262
2	244	0.000760	0.4054	0.686	-0.000716	13.0	0.991
3	244	0.002530	1.3148	0.190	0.000928	1060.0	0.338
4	244	-0.001183	-0.6883	0.492	-0.002021	-1075.0	0.331
5	244	-0.001045	-0.6121	0.541	-0.001479	-1198.0	0.279
6	244	0.000123	0.0813	0.935	0.000472	266.0	0.810
7	244	0.001730	1.0300	0.304	0.000834	1097.0	0.321
8	244	-0.000336	-0.1852	0.853	-0.004343	-1104.0	0.318
9	244	-0.001243	-0.7396	0.460	-0.002421	-1846.0	0.094
10	244	-0.006170	-2.5628	0.011	-0.004514	-3298.0	0.003

Table 4 (Continued)

Panel D: Low level of insider ownership

Day	N	Mean AR	*t*-stat	Prob > |*t*|	Median AR	Wilcoxon S	Prob > |s|
-10	192	0.000133	0.0699	0.944	0.000209	114.0	0.883
-9	192	0.002491	1.3306	0.185	0.003079	712.0	0.357
-8	192	0.001430	0.8106	0.419	0.000928	437.0	0.572
-7	192	0.002405	1.5023	0.135	0.003144	1206.0	0.118
-6	192	0.000087	0.0521	0.958	-0.000783	-14.0	0.986
-5	192	0.000712	0.3008	0.764	-0.001147	-310.0	0.689
-4	192	0.000329	0.1858	0.853	0.001784	-176.0	0.820
-3	192	-0.001105	-0.6999	0.485	-0.000696	-431.0	0.577
-2	192	-0.000196	-0.1052	0.916	-0.001276	-508.0	0.511
-1	192	0.001674	0.8937	0.373	-0.000170	236.0	0.760
0	192	-0.007292	-2.4223	0.016	-0.005588	-2151.0	0.005
1	192	0.000013	0.0060	0.995	-0.000363	92.0	0.905
2	192	0.003049	1.5743	0.117	0.002163	875.0	0.257
3	192	-0.000204	-0.1299	0.897	-0.000100	-25.0	0.974
4	192	-0.000847	-0.4752	0.635	-0.002382	-790.0	0.307
5	192	-0.001670	-0.9800	0.328	-0.003188	-1003.0	0.194
6	192	-0.001247	-0.8480	0.397	-0.002309	-844.0	0.275
7	192	-0.000389	-0.2459	0.806	0.000237	-131.0	0.866
8	192	0.001439	0.8001	0.425	-0.000619	173.0	0.823
9	192	0.000472	0.2788	0.781	-0.001479	-157.0	0.839
10	192	-0.000226	-0.1124	0.911	-0.000317	-283.0	0.715

Panel E: High level of insider ownership

Day	N	Mean AR	*t*-stat	Prob > |*t*|	Median AR	Wilcoxon S	Prob > |s|
-10	198	0.003998	1.5418	0.125	0.002058	872.5	0.281
-9	198	-0.000940	-0.4301	0.668	-0.001076	-93.5	0.908
-8	198	0.005953	2.4833	0.014	0.001946	1337.5	0.098
-7	198	0.002261	0.9417	0.347	0.004260	1040.5	0.198
-6	198	0.001960	0.8097	0.419	-0.000495	221.5	0.785
-5	198	0.000208	0.0696	0.945	-0.000872	-298.5	0.713
-4	198	0.001622	0.6983	0.486	-0.001243	328.5	0.685
-3	198	-0.000222	-0.1067	0.915	-0.001220	-518.5	0.522
-2	198	-0.001818	-0.7667	0.444	-0.003167	-1189.5	0.141
-1	198	-0.002651	-1.1046	0.271	-0.001229	-1300.5	0.107
0	198	-0.012565	-3.2165	0.002	-0.008631	-2686.5	<.001
1	198	0.000166	0.0441	0.965	-0.000830	-223.5	0.783
2	198	0.001007	0.3707	0.711	-0.004654	-857.5	0.289
3	198	-0.000137	-0.0572	0.954	-0.003717	-694.5	0.391
4	198	0.000408	0.1649	0.869	-0.002496	-179.5	0.825
5	198	0.004613	1.6158	0.108	-0.001790	-180.5	0.824
6	198	-0.000489	-0.2516	0.802	0.000257	-458.5	0.571
7	198	0.004546	2.1780	0.031	0.000721	1275.5	0.114
8	198	0.002344	1.0519	0.294	0.000575	420.5	0.604
9	198	-0.001881	-0.9221	0.358	-0.004345	-1984.5	0.014
10	198	-0.005232	-1.9090	0.058	-0.002963	-1935.5	0.016

Table 4 (Continued)

Panel F: Low level of institutional ownership

		Mean			Median		
Day	N	AR	*t*-stat	Prob > |*t*|	AR	Wilcoxon S	Prob > |s|
-10	212	0.004287	2.0018	0.047	0.003338	1820.0	0.042
-9	212	0.000065	0.0352	0.972	0.000801	-65.0	0.942
-8	212	0.005858	2.8284	0.005	0.001578	1974.0	0.027
-7	212	0.002302	1.0991	0.273	0.004555	1398.0	0.118
-6	212	-0.000699	-0.3817	0.703	-0.001939	-923.0	0.303
-5	212	0.005273	2.1494	0.033	0.002345	2497.0	0.005
-4	212	-0.000212	-0.1161	0.908	-0.003247	-833.0	0.353
-3	212	0.001477	0.8420	0.401	0.000772	246.0	0.784
-2	212	-0.000660	-0.3250	0.746	-0.001733	-779.0	0.385
-1	212	-0.002816	-1.3944	0.165	-0.003845	-2411.0	0.007
0	212	-0.002672	-0.8018	0.424	-0.001648	-700.0	0.435
1	212	-0.001025	-0.3140	0.754	0.000125	-149.0	0.868
2	212	0.001634	0.6947	0.488	-0.002541	-757.0	0.399
3	212	0.000452	0.2401	0.810	-0.001726	-339.0	0.706
4	212	-0.000119	-0.0523	0.958	-0.001060	-640.0	0.475
5	212	0.001886	0.8761	0.382	-0.000597	-485.0	0.589
6	212	0.001318	0.7934	0.428	-0.000254	-103.0	0.909
7	212	0.003099	1.8793	0.062	0.002348	1595.0	0.074
8	212	0.001578	0.7317	0.465	-0.000137	72.0	0.936
9	212	-0.000683	-0.3936	0.694	-0.001543	-1235.0	0.168
10	212	0.000199	0.1057	0.916	0.000470	169.0	0.851

Panel G: High level of institutional ownership

		Mean			Median		
Day	N	AR	*t*-stat	Prob > |*t*|	AR	Wilcoxon S	Prob > |s|
-10	217	-0.002788	-1.4437	0.150	0.000244	-926.5	0.318
-9	217	0.000117	0.0601	0.952	0.001147	279.5	0.764
-8	217	-0.001129	-0.6070	0.544	-0.000021	-606.5	0.514
-7	217	0.002781	1.5091	0.133	0.003242	1532.5	0.098
-6	217	0.003242	1.4958	0.136	0.000811	768.5	0.408
-5	217	0.001257	0.4934	0.622	-0.001483	-1389.5	0.134
-4	217	0.001451	0.6989	0.485	0.002200	629.5	0.498
-3	217	-0.001561	-0.8629	0.389	-0.001179	-676.5	0.466
-2	217	-0.003359	-1.6963	0.091	-0.003278	-2049.5	0.027
-1	217	-0.001295	-0.6336	0.527	-0.001078	-803.5	0.387
0	217	-0.016078	-4.8126	<.001	-0.010323	-4217.5	<.001
1	217	0.001105	0.4288	0.669	-0.000194	277.5	0.765
2	217	0.001842	0.9331	0.352	-0.000233	616.5	0.507
3	217	0.001773	0.8924	0.373	0.001387	605.5	0.514
4	217	0.000379	0.2116	0.833	-0.000635	108.5	0.907
5	217	-0.000027	-0.0123	0.990	-0.001187	-912.5	0.326
6	217	-0.000767	-0.4743	0.636	-0.000877	-448.5	0.629
7	217	-0.000919	-0.5007	0.617	-0.000696	-432.5	0.642
8	217	0.001058	0.6281	0.531	-0.000936	182.5	0.844
9	217	-0.000286	-0.1680	0.867	-0.002555	-906.5	0.329
10	217	-0.005432	-2.1719	0.031	-0.003744	-2683.5	0.004

Panels F and G provide the mean abnormal return for acquirers with low and high levels of institutional ownership (***InstOwn***). Firms with low levels of institutional ownership have an insignificant -0.27% (*t*=-0.80) abnormal return on average while firms with high levels of institutional ownership have a significant abnormal return of -1.61% (*t*=-4.81) on average. Consistent with the two previous univariate cuts of the sample, the market reaction to the acquirers with greater levels of institutional ownership is worse than the reaction to the group of acquirer with lower levels of institutional ownership. In this instance, though, the difference between the two subgroups is a significant 1.34% (*t*=2.84).

In sum, the market reacts negatively to the revelation of corporate control activity for acquirers. This reaction appears to be even more negative for firms with high levels of institutional ownership, but there exists no significant difference in the reactions of high versus low equity incentive acquirers or in the reactions of low versus high insider ownership acquirers.

Tables 5 and 6 provide multivariate regressions of the announcement date abnormal returns on the governance characteristics and various controls. Specifically, equation 3.8 is conducted with the announcement day market-adjusted return as the dependant variable in lieu of the long-run CAR. Table 5 reveals that deals in which equity is offered as consideration and deals structured as tender offers have a negative impact on the announcement day return regardless of the specification examined. In specification (6), the variable ***Stock*** has a coefficient of -2.361 (*t*=-3.19) and the variable ***Tend*** has a coefficient of -1.792 (*t*=-2.34). The remaining control variables ***Total Assets, RelSize, B/M*** and ***Diversify*** do not appear to significantly impact the market reaction.

The univariate results for the governance characteristics are confirmed in the announcement date multivariate regressions. Equation 2 shows that when considered in isolation, incentive compensation (***Comp***) enters the regression negatively; however, when all governance characteristics are included (equation (6)), the negative effect of higher levels of incentive compensation disappears. Neither ***InsideOwn*** nor its square enter the model significantly in any instance. Higher levels of institutional ownership, indicated by the square of ***InstOwn,*** have a statistically significant detrimental effect on

the market's reception of the announcement. In equation (6), the coefficient on the square of ***InstOwn*** is -0.001 (*t*=-1.73). Although statistically significant, it is not clear that this is an economically meaningful number. In the univariate results, the difference in announcement date returns for groups of low versus high institutional ownership acquirers was a significant 1.34%; however, a squared term is included in the multivariate setting in order to allow for any nonlinearity.

Finally, table 6 incorporates the formation of two governance indices. The first index, ***G***, is a linear function of indicator variables for high versus low levels of the governance characteristic. When ***G*** is used in the regression instead of the individual governance dummies, it enters with a significantly negative coefficient of -0.864 (*t*=-2.72), indicating that the market reacts more negatively to acquirers with "good" governance (see equation (1)). The other index is that of Gompers, Ishii and Metrick (2003), ***GIM***. This variable is also a linear function of shareholder friendly corporate charter characteristics. This index does not appear to have any effect on the market's reaction. The coefficient on ***GIM*** in specification (3) is -0.089 (*t*=-1.13).

In summary, there is evidence that the market reacts more negatively to merger news for acquirers with "good" governance characteristics than to those acquirers with less shareholder friendly internal governance. The best evidence of this comes from the significant impact of the governance index, ***G***, on the announcement date abnormal returns. This influence appears to be driven mostly by the negative reception of acquirers with high levels of institutional ownership and to a lesser extent by acquirers with higher levels of incentive equity compensation. Perhaps this result is due to the fact that firms with good governance are rewarded in valuation and the market reclaims this reward when information of a takeover arrives. The evidence on governance and firm value suggests that this is entirely possible (see Morck, Shleifer and Vishny (1988) and McConnell and Servaes (1990)). This is an interesting question in its own right and is worthy of future research.

Table 5
Multivariate Regressions of Announcement Date Abnormal Returns.

Announcement date abnormal returns are regressed on a set of governance variables and controls. Abnormal returns are calculated as the market-adjusted return on the date of public announcement using the CRSP value-weighted index including all distributions. Governance variables include *Comp* defined as the percentage of CEO compensation consisting of equity incentives during the twelve months prior to the merger announcement. *InsideOwn* is the percentage ownership of all officers and directors as reported by Compact Disclosure within twelve months prior to the announcement of the merger. *InstOwn* is the percentage ownership of institutional investors as reported by 13-F filings to the SEC in the twelve months prior to the announcement. Control variables include *Stock* which is an indicator equal to one if the acquirer used equity as all or as a portion of the consideration. *Tend* is an indicator equal to one if the deal is structured as a tender offer. *RelSize* is the size of the target relative to that of the acquirer. *B/M* is the book to market ratio of the acquirer. *Diversify* is an indicator variable equal to one if acquirer and target have different two-digit SIC codes. T-statistics are in parentheses.

	(1)	(2)	(3)	(4)	(5)	(6)
Intercept	0.745	-0.630	1.348	0.987	-0.020	1.293
	(1.13)	(-0.31)	(1.81) [a]	(1.26)	(-0.01)	(0.60)
Total Assets	0.000	-0.000	0.000	-0.000	-0.000	-0.000
	(0.01)	(-1.03)	(0.19)	(-0.43)	(-0.49)	(-1.14)
RelSize	-0.052		-0.11	-0.568	-0.209	-0.568
	(-0.05)		(-0.11)	(-0.44)	(-0.19)	(-0.41)
B/M	0.386		0.229	1.322	0.687	1.371
	(0.43)		(0.25)	(1.27)	(0.68)	(1.17)
Diversify	0.071		0.093	-0.001	0.298	0.260
	(0.16)		(0.21)	(-0.00)	(0.63)	(0.49)
Stock	-2.491		-2.482	-2.546	-2.234	-2.361
	(-4.06) [c]		(-4.05) [c]	(-3.74) [c]	(-3.36) [c]	(-3.19) [c]
Tend	-1.235		-1.260	-1.647	-1.167	-1.792
	(-1.90) [a]		(-1.94) [a]	(-2.31) [b]	(-1.66) [a]	(-2.34) [b]
Comp		-1.397	-1.210			-1.473
		(-1.53)	(-1.73) [a]			(-1.59)
InsideOwn		-0.001		-0.054		-0.093
		(-1.48)		(-1.00)		(-1.60)
InsideOwnSq		0.001		0.001		0.001
		(0.87)		(1.01)		(1.06)
InstOwn		0.093			0.066	0.075
		(1.44)			(1.21)	(1.18)
InstOwnSq		-0.001			-0.001	-0.001
		(-2.03) [b]			(-1.78) [a]	(-1.73) [a]
N	484	345	484	390	429	345
Adj R^2	0.0268	0.0253	0.0309	0.0261	0.0383	0.0507

[a,b,c] Significant at the 10%, 5% and 1% levels respectively

Table 6
Alternative Announcement Date Abnormal Return Regression Specifications.

Announcement day abnormal returns are regressed on a set of governance variables and controls. Abnormal returns are calculated as the market-adjusted return using the CRSP value-weighted index including all distributions. *Total Assets* is the book value of the firm's assets as of the most recent Compustat listing. *RelSize* is the size of the target relative to that of the acquirer. *B/M* is the book to market ratio of the acquirer. *Diversify* is an indicator variable equal to one if acquirer and target have different two-digit SIC codes. *Stock* is an indicator equal to one if the acquirer used equity as all or as a portion of the consideration. *Tend* is an dummy equal to one if the deal is structured as a tender offer. *G* is a governance index constructed using the governance characteristics of high or low levels of equity incentive compensation, insider ownership and institutional ownership. *GIM* is the index of Gompers, Ishii and Metrick (2003) if available within the twelve months prior to the announcement. T-stats are in parentheses.

	(1)	(2)	(3)	(4)
Intercept	2.199	2.056	2.374	3.282
	(2.33) [b]	(1.79) [a]	(2.35) [b]	(2.03) [b]
Total Assets	-0.000	-0.000	-0.0000	-0.000
	(-1.12)	(-1.13)	(-0.29)	(-0.33)
RelSize	-0.553	-0.774	0.165	0.122
	(-0.41)	(-0.57)	(0.15)	(0.11)
B/M	1.188	1.260	-0.951	-0.990
	(1.05)	(1.11)	(-0.98)	(-1.01)
Diversify	0.143	-1.138	-0.183	-1.121
	(0.27)	(-1.04)	(-0.41)	(-0.73)
Stock	-2.406	-1.156	-2.668	-3.307
	(-3.30) [c]	(-0.98)	(-4.32) [c]	(-2.03) [b]
Tend	-1.860	-1.907	-1.693	-1.704
	(-2.43) [b]	(-2.50) [b]	(-2.60) [c]	(-2.61) [c]
G	-0.864	-0.685		
	(-2.72) [c]	(-1.19)		
G*Diversify		0.819		
		(1.29)		
G*Stock		-0.839		
		(-1.32)		
GIM			-0.089	-0.184
			(-1.13)	(-1.20)
GIM*Diversify				0.103
				(0.65)
GIM*Stock				0.070
				(0.44)
N	345	345	364	364
Adj R^2	0.0447	0.0510	0.0360	0.0321

[a,b,c] Significant at the 10%, 5% and 1% levels respectively

4.2 Calendar-Time Results

Calendar-time regression results are presented in table 7. Panels A, B and C present the results for a twelve, thirty-six and sixty month post-merger horizon respectively. On a twelve month horizon, the monthly alpha for the full sample of acquirers using equally-weighted (EW) portfolios is an insignificant 0.17% (t=0.67). The value-weighted (VW) portfolios, however, exhibit a statistically positive abnormal monthly drift of 0.76% (t=2.26), or 9.12% for the twelve month post-merger period. Therefore, larger acquirers appear to do abnormally well on a risk-adjusted basis over the twelve months following merger completion.

For the subsamples of firms analyzed in calendar-time, there is further evidence of abnormal performance; however, there is little evidence that the subsamples of interest perform differently from their control group. For example, the VW portfolios of acquirers who structure deals as tender offers have a positive and significant monthly alpha of 1.24% (t=2.15), but the VW tender offer portfolio fails to outperform the VW portfolio of acquirers who structured the deal as a merger. The difference between the two alphas is an insignificant 0.77% (t=1.17). Other subgroups that overperform on a risk-adjusted basis but do not overperform their counterparts on a twelve-month horizon include cash acquirers [α=0.89% (t=1.73)], focusing acquirers [α=1.00% (t=1.93)], low incentive compensation acquirers [α=0.84% (t=1.77)], high insider ownership acquirers [α=1.41% (t=2.04)] and low institutional ownership acquirers [α=0.99% (t=2.01)]. The only subsample of VW portfolios that outperforms its control group on a twelve month horizon is the portfolio of glamour acquirers [α=1.12% (t=2.39)], which outperforms the VW portfolio of value acquirers by 1.44% (t=2.02) per month. While the EW portfolio of glamour acquirers also demonstrates a positive drift of 0.66% (t=1.76), it does not outperform the EW portfolio of value acquirers. There is no other evidence of abnormal performance by any EW portfolio on a twelve-month horizon.

Table 7
Calendar-Time Carhart (1997) Regression Results.

Returns are calculated for equally-weighted (EW) and value-weighted (VW) portfolios of sample firms, constructed by including all firms which have completed a merger or tender offer transaction in the prior 12, 36 or 60 months respectively. Excess returns of the portfolios are then regressed on the Carhart (1997) factors. Alphas from the time-series regression of monthly portfolio excess returns are reported. Difference represents the difference between the alpha of the top category less the alpha of the bottom category as specified in equation (3.7). *t*-stats are in parentheses. A minimum of ten (10) firms is required in the portfolio for inclusion in the time-series regression.

Panel A: 12-month Horizon

	Equally-weighted Portfolios			Value-weighted Portfolios		
	$\hat{\alpha}$ (*t*-stat)	Adjusted R^2 [Months]	Difference (*t*-stat)	$\hat{\alpha}$ (*t*-stat)	Adjusted R^2 [Months]	Difference (*t*-stat)
Full Sample	0.0017 (0.67)	.86 [96]		0.0076 (2.26)[b]	.78 [96]	
Tender Offers	0.0054 (1.30)	.75 [68]		0.0124 (2.15)[b]	.59 [68]	
Mergers	0.0021 (0.70)	.90 [68]	0.0032 (0.75)	0.0046 (1.00)	.81 [68]	0.0077 (1.17)
Cash Acquirers	0.0054 (1.52)	.79 [71]		0.0089 (1.73)[a]	.62 [71]	
Stock Acquirers	0.0022 (0.67)	.88 [71]	0.0032 (0.78)	0.0062 (1.34)	.79 [71]	0.0028 (0.47)
Value Acquirers (High B/M)	-0.0008 (-0.21)	.77 [76]		-0.0032 (-0.55)	.56 [76]	
Glamour Acquirers (Low B/M)	0.0066 (1.76)[a]	.85 [76]	-0.0074 (-1.35)	0.0112 (2.39)[b]	.76 [76]	-0.0144 (-2.02)[b]
Focusing Acquisitions	0.0024 (0.73)	.84 [76]		0.0100 (1.93)[a]	.72 [76]	
Diversifying Acquisitions	0.0024 (0.65)	.82 [76]	0.0000 (0.02)	0.0059 (1.23)	.68 [76]	0.0041 (0.63)
High Incentive Compensation	0.0038 (1.14)	.87 [76]		0.0042 (0.91)	.80 [76]	
Low Incentive Compensation	0.0009 (0.26)	.77 [76]	0.0029 (0.68)	0.0084 (1.77)[a]	.61 [76]	-0.0041 (-0.68)
High Insider Ownership	0.0030 (0.65)	.78 [74]		0.0141 (2.04)[b]	.67 [74]	
Low Insider Ownership	0.0008 (0.24)	.81 [74]	0.0022 (0.39)	0.0043 (1.12)	.75 [74]	0.0098 (1.26)
High Institutional Ownership	0.0007 (0.20)	.82 [76]		0.0028 (0.63)	.76 [76]	
Low Institutional Ownership	0.0051 (1.66)	.85 [76]	-0.0044 (-1.06)	0.0099 (2.01)[b]	.70 [76]	-0.0071 (-1.20)

[a,b,c] Significant at the 10%, 5% and 1% levels respectively

Table 7 (Continued)

Panel B: 36-month Horizon

	Equally-weighted Portfolios			Value-weighted Portfolios		
	$\hat{\alpha}$ (*t*-stat)	Adjusted R^2 [Months]	Difference (*t*-stat)	$\hat{\alpha}$ (*t*-stat)	Adjusted R^2 [Months]	Difference (*t*-stat)
Full Sample	0.0032 (1.32)	.85 [96]		0.0094 (3.11)[c]	.80 [96]	
Tender Offers	0.0045 (1.27)	.75 [75]		0.0124 (2.55)[b]	.62 [75]	
Mergers	0.0038 (1.36)	.89 [75]	0.0007 (0.20)	0.0079 (2.41)[b]	.86 [75]	0.0045 (0.92)
Cash Acquirers	0.0065 (2.04)[b]	.77 [84]		0.0138 (3.21)[c]	.68 [84]	
Stock Acquirers	0.0023 (0.74)	.85 [84]	0.0043 (1.13)	0.0061 (2.04)[b]	.86 [84]	0.0077 (1.81)[c]
Value Acquirers (High B/M)	0.0008 (0.24)	.77 [85]		0.0044 (0.93)	.58 [85]	
Glamour Acquirers (Low B/M)	0.0067 (2.47)[b]	.87 [85]	-0.0059 (-1.59)	0.0112 (3.27)[c]	.81 [85]	-0.0068 (-1.25)
Focusing Acquisitions	0.0056 (2.00)[b]	.85 [85]		0.0100 (2.67)[c]	.76 [85]	
Diversifying Acquisitions	0.0013 (0.43)	.83 [85]	0.0043 (1.54)	0.0083 (2.25)[b]	.77 [85]	0.0017 (0.38)
High Incentive Compensation	0.0036 (1.24)	.86 [85]		0.0075 (1.95)[a]	.80 [85]	
Low Incentive Compensation	0.0042 (1.38)	.79 [85]	-0.0006 (-0.18)	0.0119 (3.41)[c]	.73 [85]	-0.0044 (-0.93)
High Insider Ownership	0.0040 (1.04)	.81 [84]		0.0155 (2.47)[b]	.69 [84]	
Low Insider Ownership	0.0045 (1.58)	.80 [84]	-0.0006 (-0.16)	0.0083 (2.68)[c]	.77 [84]	0.0072 (1.08)
High Institutional Ownership	0.0017 (0.49)	.80 [84]		0.0075 (2.03)[b]	.77 [84]	
Low Institutional Ownership	0.0058 (2.38)[b]	.86 [84]	-0.0042 (-1.33)	0.0113 (2.89)[c]	.75 [84]	-0.0037 (-0.77)

[a,b,c] Significant at the 10%, 5% and 1% levels respectively

Table 7 (Continued)

Panel C: 60-month Horizon

	Equally-weighted Portfolios			Value-weighted Portfolios		
	$\hat{\alpha}$ (*t*-stat)	Adjusted R^2 [Months]	Difference (*t*-stat)	$\hat{\alpha}$ (*t*-stat)	Adjusted R^2 [Months]	Difference (*t*-stat)
Full Sample	0.0030 (1.24)	.85 [96]		0.0093 (3.13)[c]	.80 [96]	
Tender Offers	0.0051 (1.55)	.78 [75]		0.0129 (2.68)[c]	.63 [75]	
Mergers	0.0033 (1.15)	87 [75]	0.0019 (0.52)	0.0074 (2.39)[b]	.86 [75]	0.0055 (1.19)
Cash Acquirers	0.0063 (2.10)[b]	.80 [84]		0.0139 (3.27)[c]	.68 [84]	
Stock Acquirers	0.0021 (0.66)	.82 [84]	0.0042 (1.11)	0.0059 (2.10)[b]	.86 [84]	0.0079 (1.95)[c]
Value Acquirers (High B/M)	0.0006 (0.19)	.78 [85]		0.0051 (1.10)	.59 [85]	
Glamour Acquirers (Low B/M)	0.0064 (2.34)[b]	.85 [85]	-0.0058 (-1.66)	0.0110 (3.29)[c]	.81 [85]	-0.0059 (-1.13)
Focusing Acquisitions	0.0057 (2.08)[b]	.84 [85]		0.0100 (2.74)[c]	.76 [85]	
Diversifying Acquisitions	0.0005 (0.18)	.83 [85]	0.0052 (1.92)[c]	0.0081 (2.32)[b]	.78 [85]	0.0018 (0.44)
High Incentive Compensation	0.0034 (1.16)	.85 [85]		0.0076 (2.03)[b]	.81 [85]	
Low Incentive Compensation	0.0038 (1.32)	.80 [85]	-0.0005 (-0.15)	0.0113 (3.32)[c]	.72 [85]	-0.0037 (-0.81)
High Insider Ownership	0.0033 (0.92)	.81 [84]		0.0149 (2.47)[b]	.70 [84]	
Low Insider Ownership	0.0049 (1.78)[a]	.80 [84]	-0.0017 (-0.46)	0.0084 (2.80)[c]	.78 [84]	0.0065 (1.05)
High Institutional Ownership	0.0010 (0.31)	.78 [84]		0.0074 (2.12)[b]	.78 [84]	
Low Institutional Ownership	0.0059 (2.41)[b]	.86 [84]	-0.0049 (-1.62)	0.0112 (3.02)[c]	.75 [84]	-0.0039 (-0.87)

[a,b,c] Significant at the 10%, 5% and 1% levels respectively

Panel B of table 7 presents the calendar-time results on a 36-month horizon. Again, the VW portfolio of the full sample of acquirers demonstrates a significantly positive drift of 0.94% (t=3.11) per month. This is analogous to an abnormal return of 33.84% over the full 36-month period. The EW full sample portfolio fails to exhibit a statistically reliable drift.

On the 36-month horizon, all but one VW portfolio of the subgroups demonstrates abnormal drift. Only the portfolio of value acquirers fails to perform abnormally. Akin to the 12-month results, only one of the subgroups outperforms its control group. On this horizon, the subsample of cash acquirers overperforms the subsample of stock acquirers by 0.77% per month (t=1.81). This result compares with the calendar-time results of Mitchell and Stafford (2000) in which they report that acquirers using equity underperform on a 36-month horizon. The EW calendar-time results are, once again, less revealing. Evidence of reliable abnormal performance is found in the subsamples of cash acquirers [α=0.65% (t=2.04)], glamour acquirers [α=0.67% (t=2.47)], focusing acquirers [α=0.56% (t=2.00)] and acquirers with low levels of institutional ownership [α=0.58% (t=2.38)]. No EW calendar-time portfolio outperforms it counterpart.

Table 7 concludes with Panel C which provides results on the 60-month period after merger completion. Consistent with the shorter 12 and 36-month horizons, the VW calendar-time portfolio for the full sample exhibits a statistically reliable monthly alpha of 0.93% (t=3.13) which equates to an abnormal return of 55.8% over the entire time period. Also consistent with the shorter periods, there is no evidence of abnormal performance in the EW full sample portfolios.

Again, nearly all of the VW subsamples exhibit significantly positive abnormal performance. The only exception is the portfolio of value acquirers with an insignificant monthly alpha of 0.51% (t=1.10). Overperformance in the EW subsample portfolios is limited to cash acquirers [α=0.63% (t=2.10)], glamour acquirers [α=0.64% (t=2.34)], focusing acquirers [α=0.57% (t=2.08)], acquirers with low levels of insider ownership [α=0.49% (t=1.78)] and acquirers with low levels of institutional ownership

[α=0.59% (t=2.41)]. This is the first horizon on which there is broad evidence of overperformance within EW subsample portfolios. In fact, the focusing acquisitions overperform diversifying acquisitions by 0.52% (t=1.92) per month on an EW basis in the subsequent 60 months. The 60-month calendar-time results are broadly consistent with the 60-month buy-and-hold analysis of Megginson, Morgan and Nail (2003) in which they report that the main determinants of post-merger performance are corporate focus and cash as a method of payment.

An interesting note on the calendar-time portfolio results is that most of the evidence presented suggests abnormal performance in the value-weighted portfolios as opposed to the equally-weighted portfolios. Caution should therefore be used when interpreting these results as the sample is somewhat biased toward including the largest of acquirers in the first place. A more accurate interpretation would be that the "largest of the large acquirers" demonstrate the patterns documented herein.

To summarize, the findings of the calendar-time analysis indicate that there is evidence of positive drift in the full sample on a VW basis and quite a bit of evidence in support of abnormal performance on a risk-adjusted basis for individual subsamples of acquiring firms. However, very little evidence of abnormal performance exists for subsamples of acquirers in comparison to their respective controls. Even this evidence is specific to whether or not VW or EW portfolios are used and which horizon is examined. While broadly consistent with other studies, the calendar-time results reported here suggest that researchers examine multiple long-term horizons in analysis of post-merger stock returns. While it is somewhat disappointing that the data do not support a unified story that is robust across portfolios and horizons, it is important to remember that these univariate calendar-time tests do not allow for the combined effects of each of the potential determinants. The multivariate tests that follow present a more robust picture.

4.3 Multivariate Results

While calendar-time analysis represents the state-of-the-art in methodologies designed to test market efficiency on a long horizon, it is far from clear which metric of

abnormal returns should be used in conducting a multivariate analysis of long-run returns. Perhaps the calendar-time abnormal return is best specified; however, it does not allow for analysis on an individual firm level. In contrast, a market-adjusted cumulative abnormal return, while assuredly misspecified and biased, offers the greatest power to detect the determinants of long-run performance. As such, I have chosen to report multivariate results using 60-month market-adjusted CARs as the dependent variable in the regression. The discussion of robustness checks that follows provides an explanation of how the results vary with alternate left hand side metrics.

Since, the long-run performance metric has now changed for the duration of the paper, table 8 provides the univariate relation between the mean 60-month CARs (both EW and VW) and their respective subsamples. For the mean EW CARs, there is a significant difference between the large versus small acquirers (defined as above or below the sample median on an annual basis) and the diversifying versus focusing acquisitions (identified by a difference in 2-digit SIC code). The difference between the mean EW CARs of small acquirers and large acquirers is 21.98% (t=3.15). The difference in means of focusing and diversifying deals is also a significant 15.04% (t=2.13). No other subgroups differ significantly.

The univariate relations between subgroup CARs on a VW basis strongly mirrors those on an EW basis. There is a significant difference between the means of small and large acquirers of 18.65% (t=2.70) and between the means of focusing and diversifying acquirers of 16.34% (t=2.34). On a VW basis, there is also a difference in means of firms using equity and those that do not. The mean VW CAR of cash acquirers is 12.96% (t=1.91) higher than that of acquirers using equity. No other subsamples have significantly different mean VW CARs from those of their control group. These univariate relations foreshadow the multivariate results that follow.

Table 9 provides the results for the regression specified in equation 3.8. The two most notable aspects of table 9 are the strongly negative coefficients on the variables ***Diversify*** and ***Stock*** in each of the specifications. The coefficient on ***Diversify*** in specification (6) is a significant -18.528 (t=-2.12). The coefficient on ***Stock*** in specification (6) is also a significant -22.354 (t=-1.84). Corporate diversification and use

of equity appear to be very large negative determinants of post-merger abnormal stock price performance. Controlling for other factors, these two results confirm the univariate relations described above. Again, these two results are perfectly consistent

Table 8
Univariate Relation Between Abnormal Returns and Cross-Sectional Variables.

Long-run (60-month) abnormal returns are calculated as the cumulative market-adjusted return on a monthly basis using the CRSP equal- and value-weighted indices including all distributions. Subsamples are defined in terms of whether or not observations meet the criteria specified below. *T*-statistics are in parentheses.

Panel A: Equally-Weighted Results

	Yes	No	*t*-stat for Difference
Large acquirer?	-9.967	12.011	(3.15) [c]
High relative size of bidder to target?	4.350	-2.544	(0.98)
High acquirer B/M ratio (Value acquirer)?	0.362	1.510	(0.16)
Diversifying acquisition?	-7.585	7.458	(2.13)[b]
Equity consideration given?	-3.173	7.622	(1.56)
Deal structured as a tender offer?	1.677	0.628	(0.15)
High level of incentive compensation for acquirer?	2.900	-1.071	(0.56)
High level of insider ownership for acquirer?	2.636	-2.955	(0.69)
High level of institutional ownership for acquirer?	4.738	2.783	(0.26)

Panel B: Value-Weighted Results

	Yes	No	*t*-stat for Difference
Large Acquirer?	7.752	26.400	(2.70)[c]
High relative size of bidder to target?	19.764	14.186	(0.80)
High acquirer B/M ratio (Value acquirer)?	15.414	18.609	(0.46)
Diversifying acquisition?	7.746	24.089	(2.34)[b]
Equity consideration given?	12.070	25.033	(1.91)[c]
Deal structured as a tender offer?	19.519	15.972	(0.51)
High level of incentive compensation for acquirer?	18.384	15.589	(0.40)
High level of insider ownership for acquirer?	15.993	13.963	(0.25)
High level of institutional ownership for acquirer?	19.147	18.291	(0.12)

[a,b,c] Significant at the 10%, 5% and 1% levels respectively

Table 9
Multivariate Regressions of Long-Run Abnormal Returns.

Long-run (60-month) abnormal returns are regressed on a set of governance variables and controls. Abnormal returns are calculated as the cumulative market-adjusted return on a monthly basis using the CRSP value-weighted index including all distributions. *Total Assets* is the book value of the firm's assets as of the most recent Compustat listing. *RelSize* is the size of the target relative to that of the acquirer. *B/M* is the book to market ratio of the acquirer. *Diversify* is an indicator variable equal to one if acquirer and target have different two-digit SIC codes. *Stock* is an indicator equal to one if the acquirer used equity as all or as a portion of the consideration. *Tend* is an indicator equal to one if the deal is structured as a tender offer. Governance variables include *Comp* defined as the percentage of CEO compensation consisting of equity incentives during the twelve months prior to the merger announcement. *InsideOwn* is the percentage ownership of all officers and directors as reported by Compact Disclosure within twelve months prior to the announcement of the merger. *InstOwn* is the percentage ownership of institutional investors as reported by 13-F filings to the SEC in the twelve months prior to the announcement. T-statistics are in parentheses.

	(1)	(2)	(3)	(4)	(5)	(6)
Intercept	42.009	-22.131	31.333	52.258	24.725	12.821
	(4.00) [c]	(-0.68)	(2.65) [c]	(4.09) [c]	(0.91)	(0.36)
Total Assets	-0.001	-0.001	-0.0001	-0.001	-0.000	-0.001
	(-1.26)	(-0.73)	(-1.46)	(-1.32)	(-0.33)	(-0.88)
RelSize	-11.777		-10.761	-14.280	-16.323	-19.097
	(-0.73)		(-0.67)	(-0.68)	(-0.94)	(-0.84)
B/M	3.853		6.626	-2.093	-2.602	-2.113
	(0.27)		(0.46)	(-0.12)	(-0.16)	(-0.11)
Diversify	-17.169		-17.559	-20.238	-18.398	-18.528
	(-2.45) [b]		(-2.52) [b]	(-2.49) [b]	(-2.46) [b]	(-2.12) [b]
Stock	-19.430		-19.588	-22.661	-23.371	-22.354
	(-1.99) [b]		(-2.01) [b]	(-2.05) [b]	(-2.23) [b]	(-1.84) [a]
Tend	-9.038		-8.601	-9.038	-15.148	-13.366
	(-0.87)		(-0.83)	(-0.78)	(-1.37)	(-1.07)
Comp		30.126	21.423			26.184
		(2.03) [b]	(1.93) [a]			(1.73) [a]
InsideOwn		-1.114		-1.182		-1.279
		(-1.17)		(-1.35)		(-1.34)
InsideOwnSq		0.010		0.014		0.015
		(0.52)		(0.81)		(0.79)
InstOwn		1.283			0.326	0.998
		(1.22)			(0.38)	(0.95)
InstOwnSq		-0.011			0.001	-0.007
		(-1.20)			(0.11)	(-0.83)
N	484	345	484	390	429	345
Adj R^2	0.0126	0.0131	0.0182	0.0179	0.0167	0.0246

[a,b,c] Significant at the 10%, 5% and 1% levels respectively

with those of Megginson, Morgan and Nail (2003) in which they report that the main contributors to post-merger success are corporate focus and the use of cash as the method of payment. Also consistent with Megginson, Morgan and Nail (2003) (and inconsistent with the findings of Rau and Vermaelen (1998)) is the inability of the value/glamour effect to explain any of the cross-section of long-run returns. ***Tend***, ***RelSize*** and ***TotalAssets*** also do not provide any additional explanation for the variation in 60-month CARs.

When compared to the results for the initial market reaction in table 5, the results for ***Diversify*** and ***Stock*** are even more interesting. For the cross-sectional explanation of the initial market reaction, ***Diversify*** had no explanatory power in any of the regression specifications. But in the explanation of long-run return variation it has a great deal of explanatory power. Investors therefore appear to not only initially misprice this long-run drift, they also fail to incorporate the information at all. The potential implication for market efficiency regarding stock deals is somewhat less worrisome. The market correctly reacts (negatively) to news of an acquisition using equity, but investors appear to underreact to this news. Use of equity continues to impact returns on a long horizon.

With regard to the three governance measures used in the multivariate analysis, incentive executive compensation (***Comp***) appears to be a determinant of long-run post-merger success. The positive coefficient on ***Comp*** of 26.184 (t=1.73) in specification (6) is marginally significant and is as strong and even more significant in the alternate regressions reported. Intuitively, this positive and significant coefficient suggests that CEOs who are compensated more heavily on an equity incentive basis in the twelve months prior to a merger announcement complete deals that perform abnormally well on a long-term horizon. ***InsideOwn***, ***InstOwn*** and their respective squares do not explain any of the cross-sectional variation in long-run stock returns. Given the potential non-linearity in the effects of these two variables, their inability to explain long-run CARs is not very surprising.

The positive impact of incentive compensation on long-run post-merger performance is somewhat puzzling given the results of table 5. Firms with higher levels

of incentive compensation appear to have a lower initial stock price response than firms whose CEOs are not compensated as heavily via incentive equity, yet high levels of CEO incentives are typically associated with firms that do better after merger completion.

As an alternative to the examination of each individual governance mechanism, I again use the governance index, ***G***, in an effort to gauge the overall impact of governance on long-run returns. Because of data availability, I also include ***GIM*** from Gompers, Ishii and Metrick (2003) in an analysis of shareholder friendly corporate charter provisions to gauge their impact on post-merger success. Essentially, I use the same procedure on the 60-month horizon that I used on the announcement day returns. The results of this alternative are presented in table 10. The comparable short-term results were presented in table 6.

Neither ***G*** nor ***GIM*** appears to explain any portion of the variation in long-run CARs. To ensure the impact of governance is not somehow clouded by the overwhelming influence of ***Diversify*** and ***Stock***, I also include interactions of these two variables with ***G*** and ***GIM***. Even with the interaction terms included, the indices do not contribute to the explanatory power of the regression.

Since the results presented here confirm those of previous research of diversification and use of equity in corporate control activity, I next ask if there is some underlying difference in the governance characteristics of firms who chose to diversify and those that do not and of firms that use equity and firms that do not. Table 11 reports the results. Panel A shows that there does not appear to be a substantial difference in the governance structures of firms that diversify versus those that do not. The only evidence which might suggest that a difference exists is in comparing the median level of insider ownership. Firms in the sample that chose to diversify have a lower median level of insider ownership than firms that chose not to. Panel B of table 11 extends the analysis to stock deals. Contrary to the median results on diversification in panel A, firms that complete stock deals have a higher mean level of insider ownership than those that do not use equity. Also, firms that chose to do stock deals have higher mean and median levels of institutional ownership. Since the combination

Table 10
Alternative Long-Run Abnormal Return Regression Specifications.

Long-run (60-month) abnormal returns are regressed on a set of governance variables and controls. Abnormal returns are calculated as the cumulative market-adjusted return on a monthly basis using the CRSP value-weighted index including all distributions. *Total Assets* is the book value of the firm's assets as of the most recent Compustat listing. *RelSize* is the size of the target relative to that of the acquirer. *B/M* is the book to market ratio of the acquirer. *Diversify* is an indicator variable equal to one if acquirer and target have different two-digit SIC codes. *Stock* is an indicator equal to one if the acquirer used equity as all or as a portion of the consideration. *Tend* is an dummy equal to one if the deal is structured as a tender offer. *G* is a governance index constructed using the governance characteristics of high or low levels of equity incentive compensation, insider ownership and institutional ownership. *GIM* is the index of Gompers, Ishii and Metrick (2003) if available within the twelve months prior to the announcement. T-stats are in parentheses.

	(1)	(2)	(3)	(4)
Intercept	46.017	40.333	27.818	60.989
	(2.97) [c]	(2.13) [b]	(1.81) [a]	(2.50) [b]
Total Assets	-0.000	-0.000	-0.0001	-0.001
	(-0.19)	(-0.21)	(-1.61)	(-1.76) [b]
RelSize	-21.229	-19.591	-22.274	-25.888
	(-0.95)	(-0.87)	(-1.32)	(-1.53)
B/M	-6.406	-6.835	15.647	16.493
	(-0.34)	(-0.37)	(1.06)	(1.12)
Diversify	-17.110	5.157	-12.303	-17.638
	(-1.95) [a]	(0.28)	(-1.79) [b]	(-0.76)
Stock	-24.873	-30.832	-9.784	-59.241
	(-2.07) [b]	(-1.58)	(-1.04)	(-2.41) [b]
Tend	-13.606	-13.262	-3.179	-3.694
	(-0.87)	(-1.05)	(-0.32)	(-0.37)
G	2.200	5.463		
	(0.42)	(0.57)		
G*Diversify		-14.511		
		(-1.39)		
G*Stock		3.865		
		(0.37)		
GIM			0.650	-2.825
			(0.54)	(-1.21)
GIM*Diversify				0.724
				(0.30)
GIM*Stock				5.302
				(2.81) [b]
N	345	345	364	364
Adj R^2	0.0097	0.0108	0.0074	0.0150

[a,b,c] Significant at the 10%, 5% and 1% levels respectively

Table 11
Univariate Relation Between Governance and Deal Characteristics.

Univariate relation between governance characteristics of sample firms involved in diversifying versus focusing deals, equity versus non-equity deals and the intersection of the two. *Comp* defined as the percentage of CEO compensation consisting of equity incentives during the twelve months prior to the merger announcement. *InsideOwn* is the percentage ownership of all officers and directors as reported by Compact Disclosure within twelve months prior to the announcement of the merger. *InstOwn* is the percentage ownership of institutional investors as reported by 13-F filings to the SEC in the twelve months prior to the announcement.

Panel A: Diversifying vs. Focusing Deals

	Diversify	N	Mean	*t*(Diff)	Median	*Z*(Diff)
Comp	0	274	0.4689		0.5550	
Comp	1	210	0.4831		0.5156	
Difference			-0.0140	(-0.50)	0.0394	(0.73)
InsideOwn	0	225	0.0850		0.0328	
InsideOwn	1	165	0.0739		0.0192	
Difference			0.0110	(0.89)	0.0136	(2.97)[a]
InstOwn	0	244	0.6279		0.6464	
InstOwn	1	185	0.6536		0.6874	
Difference			-0.0257	(-1.39)	-0.0410	(-1.57)

Panel B: Equity vs. Non-Equity Deals

	Stock	N	Mean	*t*(Diff)	Median	*Z*(Diff)
Comp	0	184	0.4602		0.4906	
Comp	1	300	0.4842		0.5555	
Difference			-0.0240	(-0.81)	-0.0649	(1.12)
InsideOwn	0	154	0.0666		0.0236	
InsideOwn	1	236	0.0892		0.0263	
Difference			-0.0226	(-1.95)[c]	-0.0027	(0.21)
InstOwn	0	168	0.6184		0.6237	
InstOwn	1	261	0.6522		0.6901	
Difference			-0.0338	(-1.81)[c]	-0.0664	(-2.87)[a]

Panel C: Diversifying & Equity vs. Focusing & Non-Equity

	Diversify & Stock	N	Mean	*t*(Diff)	Median	*Z*(Diff)
Comp	0	361	0.4720		0.5392	
Comp	1	123	0.4842		0.5397	
Difference			-0.0120	(-0.37)	-0.0005	(-0.10)
InsideOwn	0	296	0.0776		0.0278	
InsideOwn	1	94	0.0887		0.0193	
Difference			-0.0111	(-0.67)	0.0085	(1.89)[c]
InstOwn	0	324	0.6331		0.6522	
InstOwn	1	105	0.6571		0.7027	
Difference			-0.0240	(-1.13)	-0.0505	(-2.02)[b]

[a,b,c] Significant at the 10%, 5% and 1% levels respectively

of panels A and B do not appear to offer a clear picture, panel C reports the governance levels for firms completing diversifying deals using equity (double whammy "bad deals") versus those that do focusing deals without equity ("not-bad deals"). The mean values of the governance characteristics are not revealing, however, the median level insider ownership for "bad deals" is significantly lower than the median level of insider ownership for the "not-bad deals".

The median level of institutional ownership for "bad deals" is lower than the median level of institutional ownership for acquirers in "not-bad deals". Although these results are interesting in their own right, the conclusion I draw from this additional analysis is that there is not a clear difference in the governance characteristics of firms in diversifying or equity deals that could be clouding the multivariate results.

Finally, table 12 provides a list of robustness tests performed on the multivariate analysis. In general, the multivariate results are more sensitive to changes in the dependent variables than they are to changes in the 60-month CAR metric. Alternatives to the left hand side metric include use of the shorter 12 and 36-month horizons and use of the EW market portfolio as opposed to the VW results reported. Very little variation in the results was observed when these changes were made. When the market-adjusted returns were compounded as a BHAR, the lower power of the statistic resulted in weaker results for all specifications of the dependent variable. This power was even lower when an in-sample alpha from the Carhart (1997) four-factor model was used in the regression. Finally, the 60-month CARs were normalized by the number of returns used in the CAR calculation to account for the fact that all firms did not have a full 60 months worth of returns data. No material impact on the results was noted.

The results are less robust to changes in the right hand side of the equation. When indicators are used in lieu of the absolute levels of the governance variables, the large number of indicators appears to confuse the coefficients and subsequently the inferences. Use of market equity in place of total assets to control for firm size has no material impact. A univariate correlation matrix of dependant variables indicates that multicollinearity is not a problem. In an effort to further examine the differences between the governance structures of diversifying versus focusing deals and equity

versus non-equity deals, regressions are conducted on subsamples of diversifying acquirers, focusing acquirers, equity acquirers and non-equity acquirers. No discernable pattern emerges. Use of heteroskedastic and autocorrelated robust estimates weakens the statistical significance of the multivariate coefficients somewhat, but the general pattern of the results remained unchanged.

To summarize, the market reacts negatively to an acquirer's announcement of a merger. On average, that reaction is more negative for firms with "good governance." There is some calendar-time evidence of abnormal performance on a risk adjusted basis; however, when compared to a control group, abnormal performance is limited to large glamour acquirers on a 12-month horizon, large cash acquirers on a 36 and 60-month horizon and smaller focusing acquirers on a 60-month horizon. Multivariate analysis of long-run returns also reveals that equity as a method of payment and corporate diversification are associated with lower post-merger performance. There is also evidence that suggests higher levels of incentive compensation for CEOs is associated with more successful merger transactions for long-term investors.

Table 12
Robustness of Multivariate Regressions.

The following robustness checks were conducted of the multivariate regressions performed in table 9. In the results reported in table 9, 60-month abnormal returns were regressed on variables hypothesized to explain the cross-sectional variation in long-run performance of acquiring firms. Abnormal returns were calculated as the value-weighted market-adjusted return on a monthly basis compounded for 60 months.

Panel A: Robustness Checks for the Dependent Variable

1. Abnormal returns were calculated on 12- and 36-month horizons
2. Equally-weighted market returns were used as benchmarks
3. Buy-and-hold abnormal returns were used instead of cumulative abnormal returns.
4. Alphas from the Carhart (1997) four-factor model were estimated in a time-series regression for each individual acquirer during the post-merger period.
5. Abnormal returns were normalized to account for right censoring of the returns data at year end 2001.

Panel B: Robustness Checks for the Independent Variables

1. As an alternative to the values associated with the governance characteristics, indicator variables were used in lieu of each governance variable to indicate whether or not an acquirer had a high or low value for the characteristic.
2. Market equity was used in lieu of book value of assets to control for size. This had no material impact on the results.
3. Correlations between independent variables indicate that multicollinearity is not an issue in the multivariate regression.
4. Multivariate regressions were calculated on the subsamples of deals that are diversifying, focusing, use equity and use no equity.
5. Outlying observations do not appear to plague the results. I employed the experimental RobustReg procedure in SAS Release 9.0, and the results remain qualitatively unchanged.

CHAPTER V
CONCLUSION

Decades of research has attempted to establish whether or not merging firms create or destroy value for the shareholders of both the acquirer and the target in merger transactions. Concurrent research has attempted to determine whether or not the stock price response and performance after the merger are in keeping with the auspices of market efficiency. This paper combines the developments in this literature with the notion that better governed firms should make better investment decisions.

As the asset pricing literature has evolved over the years, corporate researchers have applied changing asset pricing models to the periods surrounding a corporate control event. The outcome has been as many different sets of results as there have been sets of methodologies. As Fama (1998) notes, it is difficult to establish the existence or absence of abnormal performance without first objectively identifying "normal" performance.

While this paper examines the question of market efficiency in and around a merger transaction, its main contribution is establishing a relation between acquirer governance structure prior to a merger announcement and the stock price response to that announcement in both the short and long-run (with emphasis on the long run). If governance mechanisms serve to appropriately align the interests of shareholders and managers, then firms with better governance structures should make investment decisions (undertake mergers) that maximize shareholder value. I examine three governance mechanisms that could impact the decision to merge: the proportion of equity incentive compensation received by the CEO in the twelve months prior to the announcement, the level of officer and director ownership in the twelve months prior to the announcement and the level of institutional ownership in the twelve months immediately prior to the initial news release. I also incorporate a governance index which is a linear function of the three. Specifically, the index takes a value of zero if the acquirer has low levels of all three mechanisms, and the index takes a value of three if it has high levels of all three. Finally, I incorporate the governance index of Gompers,

Ishii and Metrick (2003) to examine whether or not shareholder-friendly corporate charter provisions impact the success or failure of a merger for investors of the acquirer.

I collect a sample of acquisitions from the Securities Data Corporation (SDC) Mergers and Acquisitions Database. I impose data requirements from both CRSP and Compustat as well as compensation data from Standard and Poor's ExecuComp Database. Finally, I eliminate financial institutions and regulated utilities. The result is a sample of 484 acquisitions completed between January 1, 1993, and December 31, 2000. I collect additional governance data on these 484 firms from the Compact Disclosure CD-ROM.

In order to test the proposition that governance influences merger performance, I use a myriad of methodologies. First, I conduct a standard event study for merger announcements and examine whether or not this announcement is different for firms with high versus low values of the governance variables. Next, I conduct a multivariate regression of the announcement day returns on the governance mechanisms and controls. I then form equally-weighted and value-weighted portfolios in calendar time in a test of market efficiency on a 12 to 60-month horizon. I also test for differences between the alphas of each of the subsamples of interest. Finally, I conduct multivariate regressions of long-run returns on the governance variables and a set of controls.

Here is a summary of the results:

1. The mean announcement day abnormal return for the full sample of acquirers is a significant -1.02% (t=-4.62).

2. The only significant difference in mean abnormal returns on a univariate basis is observed between the groups of acquirers that have low and high levels of institutional ownership. The reaction to these two groups differs by 1.34% (t=2.84) with the group of high institutional ownership acquirers having a more negative stock price response.

3. Multivariate regressions to describe the initial market response indicate that governance is a significant factor. A linear governance index comprised of the three measures loads negatively when included in an explanatory regression. When included

by themselves, ***Comp*** (an indicator equal to one if the CEO is compensated more heavily on an equity incentive basis) and the square of ***InstOwn*** (the percentage of institutional ownership) load negatively in the specification. Although statistically significant, the square of ***InstOwn*** is not economically meaningful.

4. Additional variables with explanatory power in the cross-section of announcement returns include ***Stock*** (an indicator equal to one if equity is used as consideration in the deal) and ***Tend*** (an indicator equal to one for a deal structured as a tender offer). Each has a significantly negative influence on the initial market reaction.

5. In calendar-time, there is evidence of long-term overperformance on a 12, 36 and 60-month for the largest of the acquirers in the sample.

6. There exists a discrepancy in the inferences one can make regarding the performance of portfolios that are equally-weighted versus those that are value-weighted in calendar-time.

7. In calendar-time, the choice of long-term horizon (12, 36 or 60-months) has a substantial impact on the conclusions I (and other researchers) are able to make regarding abnormal performance of subsamples.

8. Multivariate regressions of 60-month CARs on the governance variables and controls indicate that corporate focus, method of payment and incentive CEO compensation have explanatory power. A dummy identifying diversifying deals loads negatively; as does a dummy identifying deals involving stock as a method of payment. The coefficient estimate on ***Comp*** is positive and significant indicating that CEOs with increased equity incentives find deals that create long-term shareholder value.

9. Acquirers that undertake deals involving equity or diversifying deals (or both) do not appear to have significantly different governance structures than those that do not.

10. The results are relatively robust to an exhaustive list of reasonable alterations to the methodology.

Gompers, Ishii and Metrick (2003) were the first researchers to report that a firm's corporate governance appears to influence long-run stock returns. They find that

firms with a greater number of "shareholder-friendly" corporate charter provisions outperform firms with less "shareholder-friendly" provisions on a long-term horizon. In this regard, perhaps it is not surprising to discover that additional governance measures influence stock returns around certain corporate news events. However, as far as I am able to determine, this paper is the first evidence that supports the notion that if you compensate a CEO via a greater percentage of incentives, then he or she finds deals that create more value for shareholders on a longer horizon.

A logical extension to this research is the incorporation of a variable that captures the level of independence of the acquirer's board of directors. The board of directors serves as shareholder representatives and has the express responsibility of monitoring management. As such, it is entirely possible for the board of directors to have an influence on the success or failure of a merger. Additionally, an examination of post-merger operating performance would perhaps reveal ways in which governance effects the merger that this paper does not capture. There is no doubt that other research avenues exist with regard to the topic of mergers and governance.

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